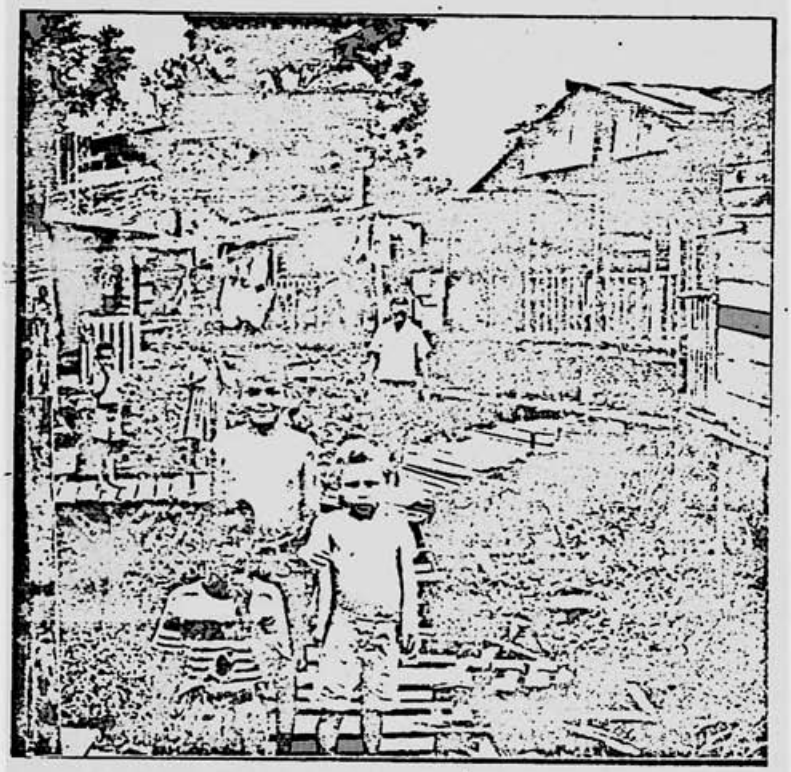
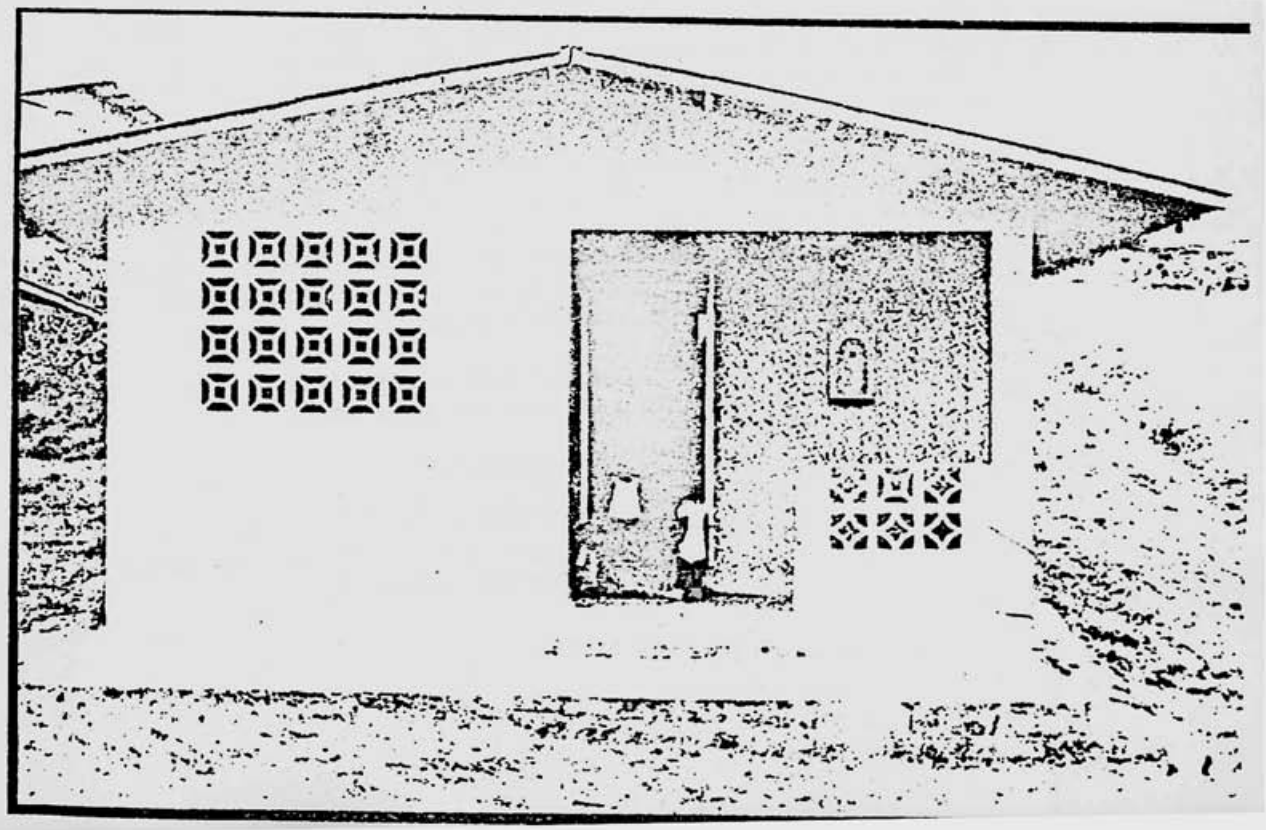


THE MINIMUM SHELTER APPROACH

can produce housing which poor families can afford

1972

Foundation for Cooperative Housing



F C H INTERNATIONAL, INC.
A SUBSIDIARY OF THE FOUNDATION FOR COOPERATIVE HOUSING
1012 FOURTEENTH STREET, N.W. WASHINGTON, D.C. 20005 • (202) 737-3411

August 31, 1972

Mr. Harold Robinson, Chief
Housing and Urban Development Division
Bureau for Latin America - AID
New State Department Building
Room 3243
Washington, D. C. 20523

Dear Mr. Robinson:

We are pleased to transmit Volume I of our applied research study "Cooperative Housing and the Minimum Shelter Approach in Latin America".

It has been the practice throughout Latin America to consider housing for low-income families as a problem to be solved by public sector institutions. Most private sector housing efforts have been concentrated at the middle and upper-middle-income level. However, there are examples of small scale housing projects for very low-income families developed by non-profit private sector organizations. Our report calls attention to some of the more successful projects of this type which have produced housing under $1,500 per unit.

We urge AID to take a new look at the potential for expanding these private sector efforts as a complement to government programs for low-income families. Cooperative techniques and private cooperative technical service organizations can be used to channel the resources and energies of low-income families to help them solve their own housing problem.

We appreciate the cooperation and help received from your office and from USAID missions in carrying out this work.

Sincerely,

Charles F. Dean

Charles F. Dean, Vice President
FCH International

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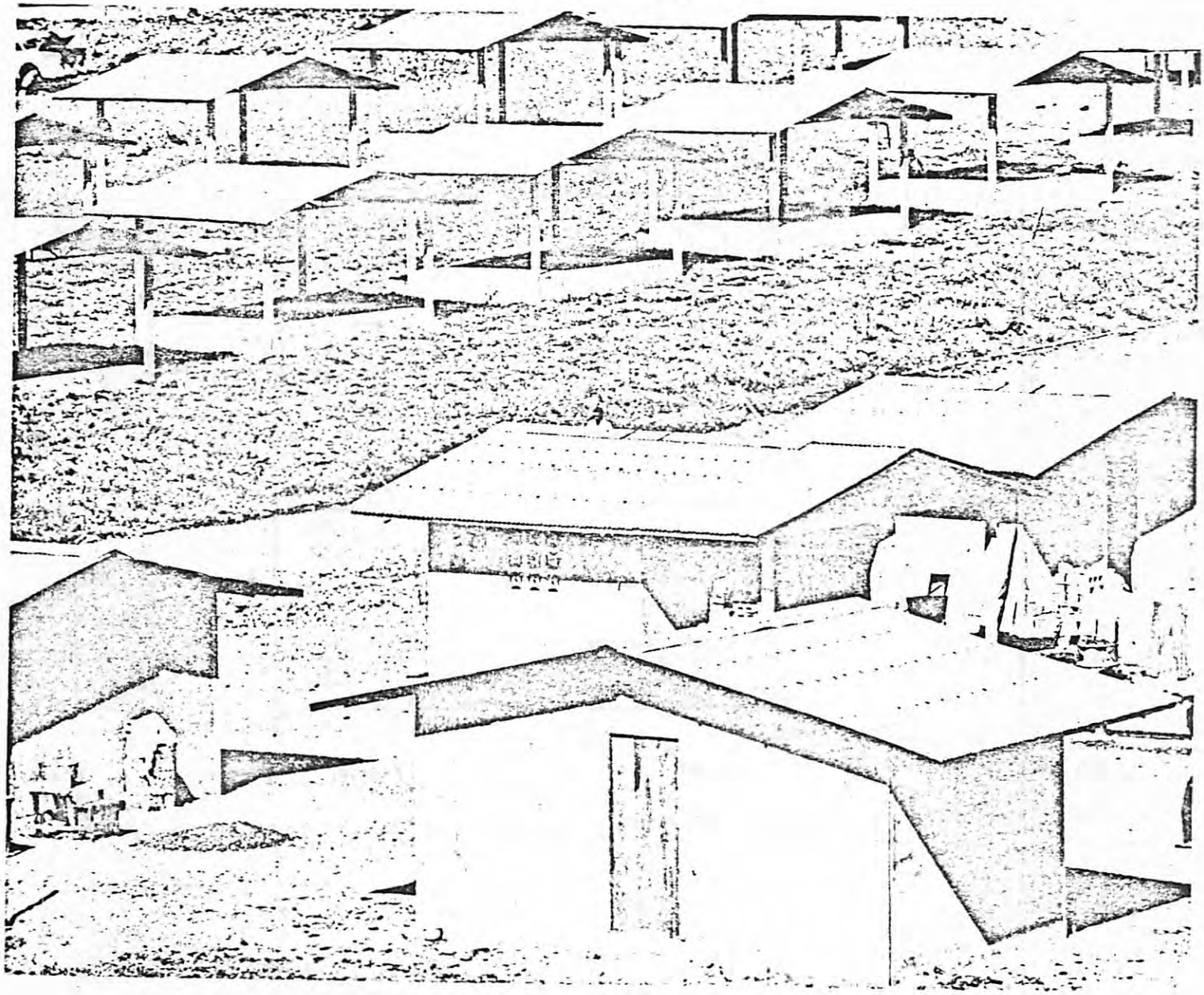
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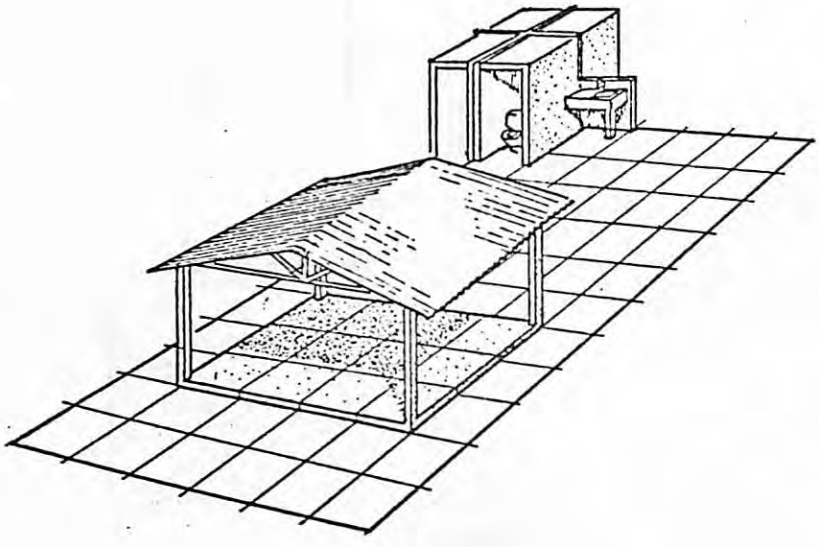
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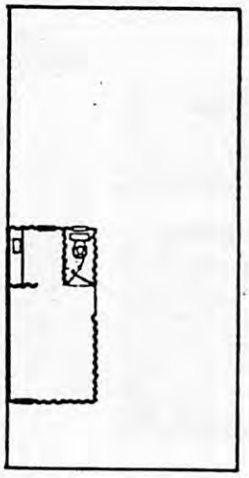
"SHELL" HOUSES





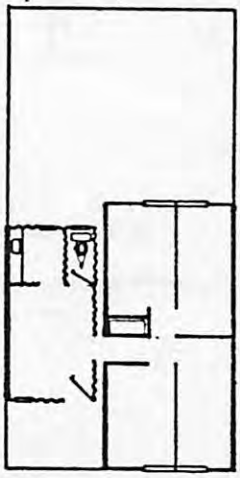
Shell houses consisting of floor, columns and roof are completed by the family's own efforts.

"CORE" HOUSEING



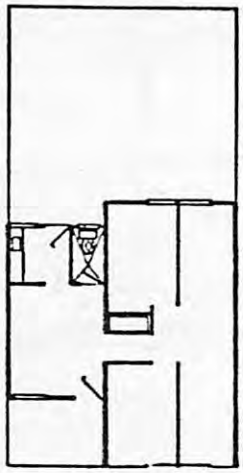
Plan

First stage



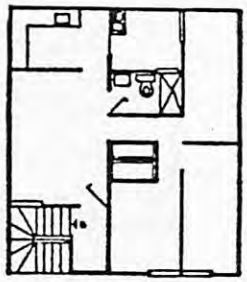
Plan for first floor

Second stage



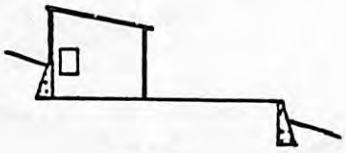
Plan for first floor

Third stage

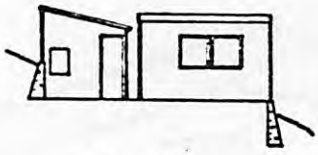


Plan for second floor

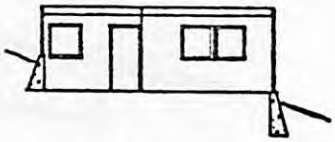
Fourth stage



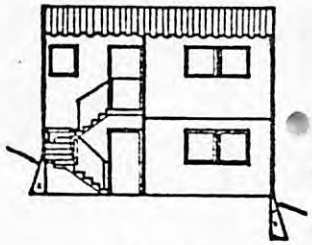
Facade



Facade

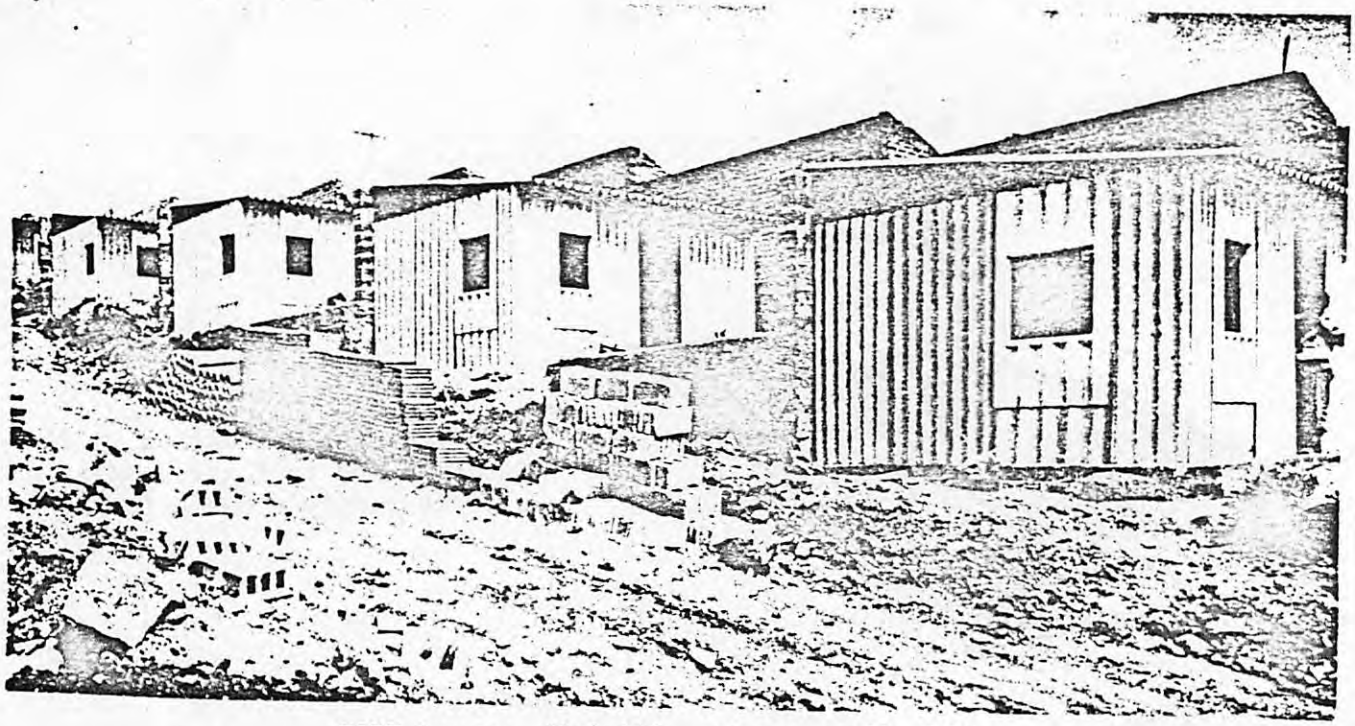


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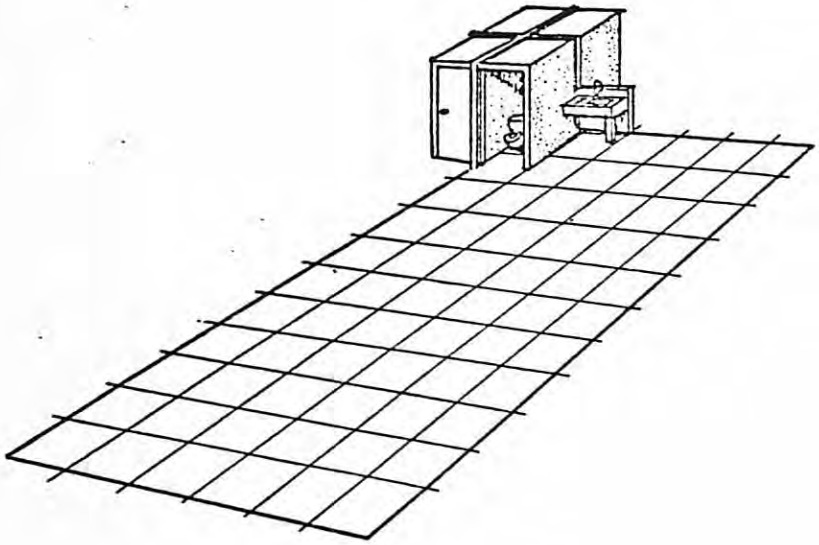
Facade

Progressive building plan for CORE houses developed by the ICT in Medellin, Colombia, 1970.

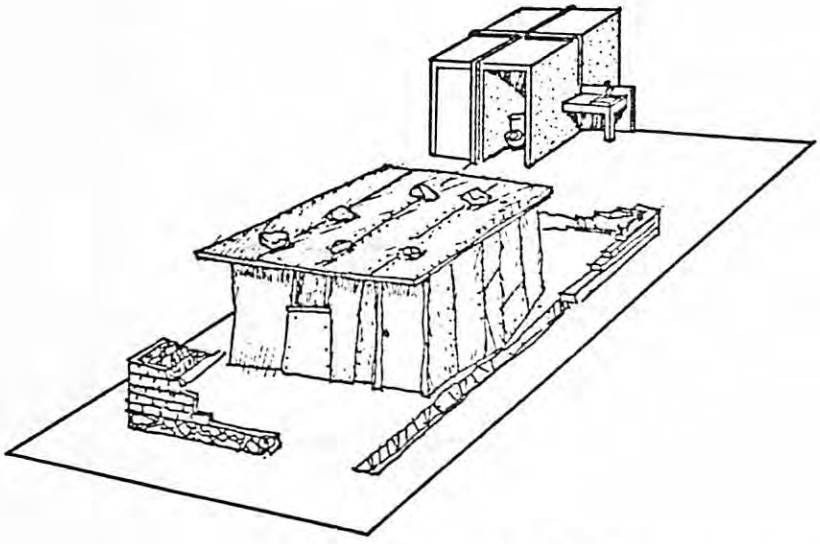


CORE houses, Medellin, photo credit ICT.

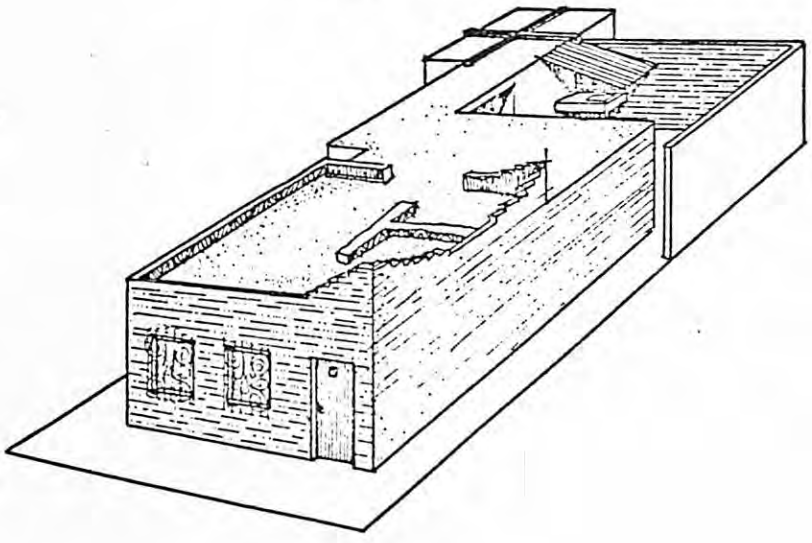
"SITE AND SERVICE" ALTERNATIVE



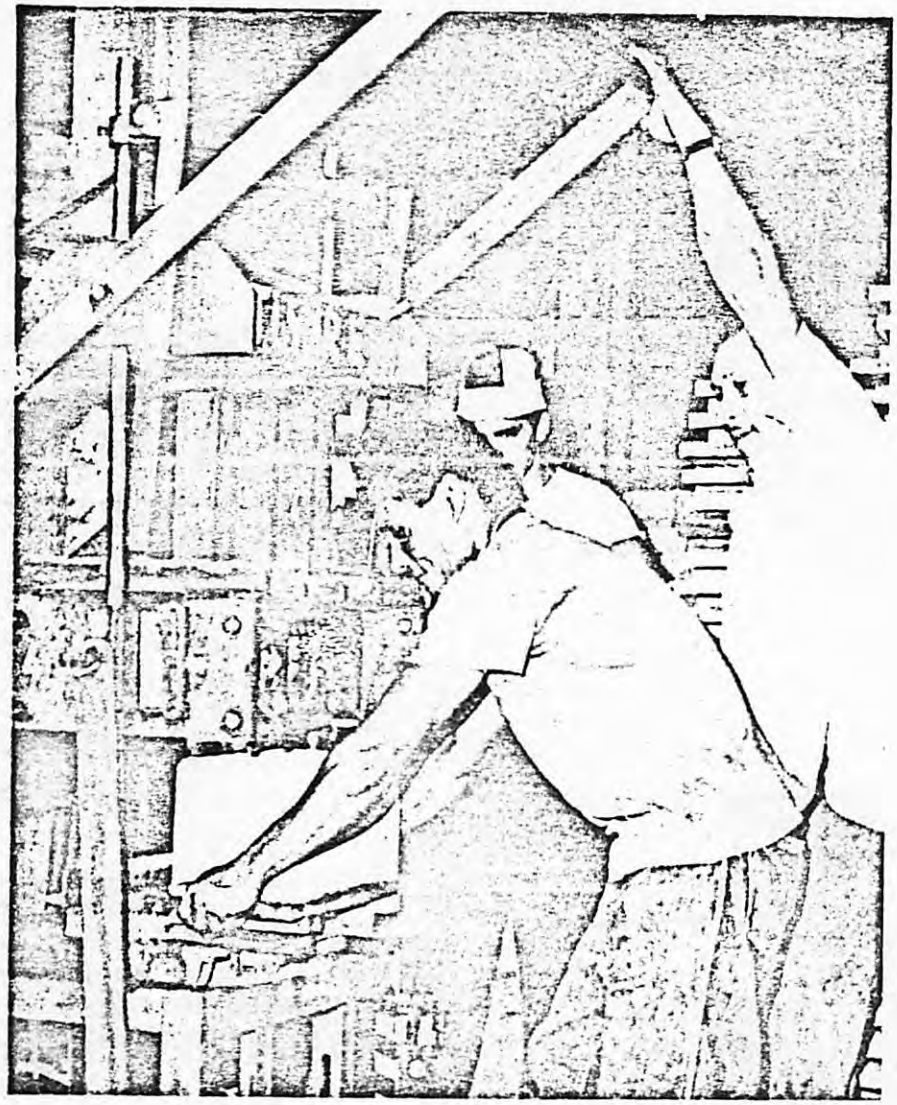
STEP I - Family is provided with a lot in a planned community with minimum sanitary services. In this plan 4 sanitary units are joined at the intersection of 4 lots, minimizing costs.



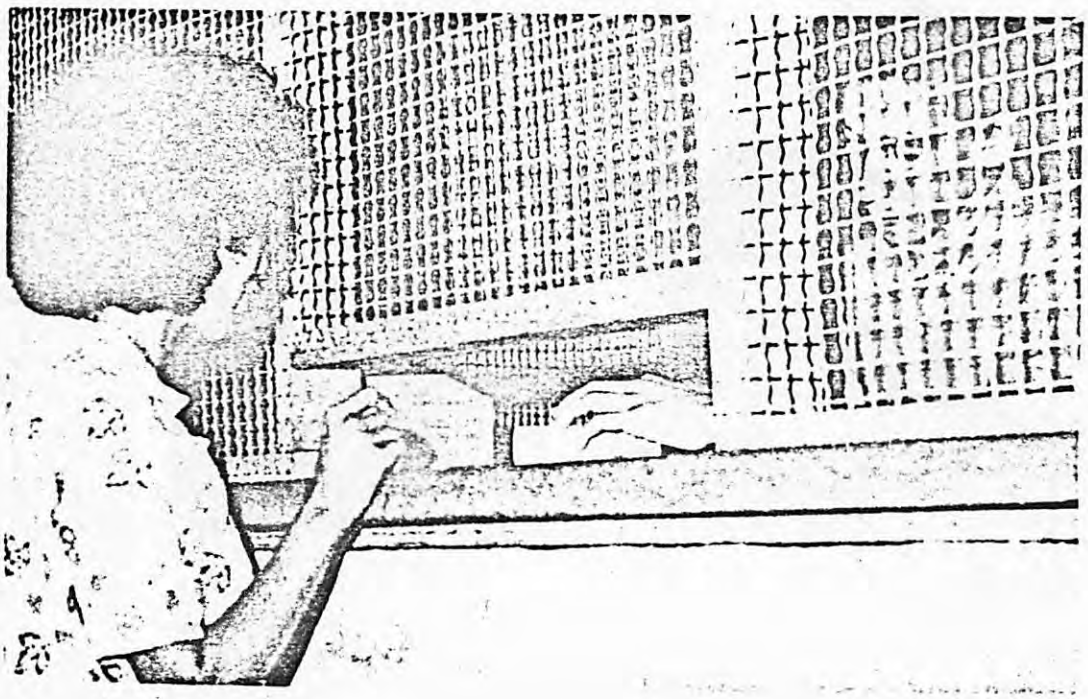
STEP II - Family may initially erect a shack from whatever materials are available.



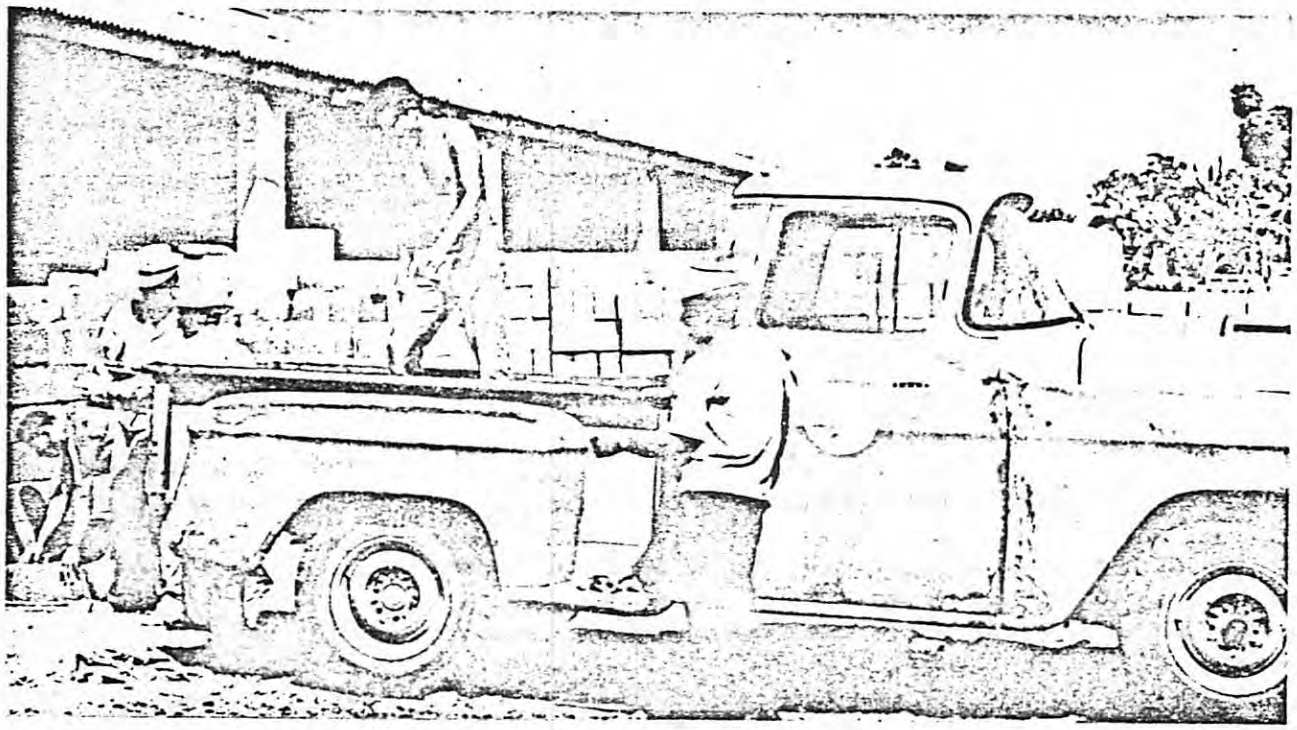
STEP III - As family income permits a permanent house of better materials is constructed by unaided self help. The site and service alternative seeks to control and legalize what otherwise would occur in an uncontrolled settlement.



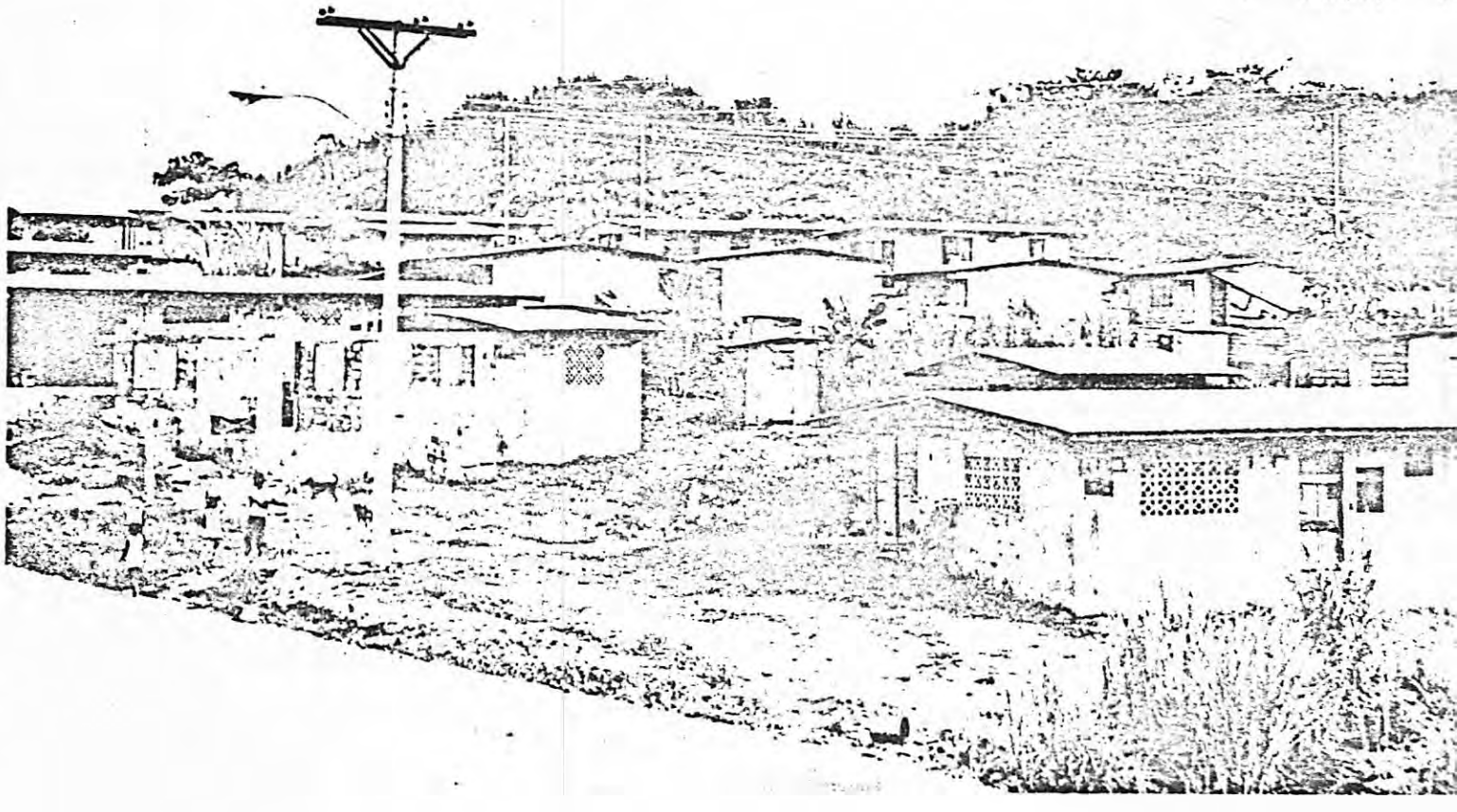
Block making can produce jobs.



Small loans are made to residents for building materials



Materials are delivered to participants lot.



CORE Houses are expanded and completed by owner's self help.

COOPERATIVE HOUSING AND THE MINIMUM SHELTER APPROACH IN LATIN AMERICA

I. PURPOSE AND BACKGROUND

The Latin American Bureau of AID has suggested that cooperative housing activities funded by AID should be directed toward the lowest income groups for which home ownership is feasible. The purpose of this report is to analyze the problem of reaching low income families with AID supported housing programs and to make specific recommendations on how cooperative housing techniques can be applied to help solve this problem.

During 1971, the Latin American Bureau of AID assigned a task force of AID officials to prepare a written evaluation of the work of all U. S. cooperative organizations working in Latin America under contract with AID. Regarding FCH work with AID, the task force report stated:

> "The task force concludes that future cooperative housing programs should focus rigorously on the lowest income groups for which home ownership is feasible."

The task force went on to say that the target groups for AID-supported FCH activities under Task Order #3 (Latin American and Caribbean Regions) should be "the lowest income group with earning capacity sufficient to make some form of mortgage payments to purchase shelter." They suggested that the cost to the home buyer should range from $600 to $1,500 per unit.

As a first step toward implementation of the AID task force recommendations, the Latin American Bureau requested FCH to conduct research and prepare a report outlining a new approach to the problem. The approaches proposed by FCH can legitimately lay claim to being new and innovative; at the same time, they are rooted in past experience and some have been tried before in various forms. Principally, FCH is urging a new approach and a new model for minimum housing.

The new approach involves the use of cooperative techniques through which individuals may join together to produce a common goal, namely, better houses in better communities. Cooperatives are uniquely designed to mobilize self-help efforts in producing housing, so that poorer families can join together to use their resources more effectively. Cooperative techniques can provide ready-made vehicles to organize a constituency of people who will continue to focus on their own housing problems. Cooperatives can also provide a necessary buffer between state operated programs and the housing consumer.

Housing cooperatives have been successfully implemented by means of a device known as a technical service organization (TSO). An examination of the housing experiences of private sector groups in many countries, including the United States has shown that even well-intentioned, well-financed groups often fail unless there is a competent, experienced technical body to assist them.

Over the last decade, FCH has worked closely with AID to develop TSO:'s that could provide the critical skills and advice necessary to successfully implement cooperative housing programs. TSO 's have been created in Colombia (PROVICOOP); Panama (FUNDAVICO); Honduras (FEHCOVIL); Jamaica (Mutual Housing Services); and Venezuela (INVICA). These TSO's could expand their efforts and develop minimum shelter programs using cooperative techniques.

The new model for AID supported housing that FCH proposes is a "minimum shelter" form of housing. This can be provided in many ways. One is a "shell" house consisting of only a roof and a floor; another is a "core" house, which is an enclosed structure that includes basic fixtures. These options can range in cost from $700 to $1,500 and can be completed and expanded by the occupant himself as his income permits. Another alternative for very poor families is the "site and service" approach. Here, the bare plot and minimum services, such as water and waste disposal, are provided and the resident develops the type of shelter he can afford himself.

There are two elements that set the "minimum shelter" model apart from other models. In the first place, it provides a unit that is designated to match the ability to pay of the occupant. In the traditional approach to housing, planners have designed a house and then estimated how many people could afford it. The minimum shelter approach works differently. Here, an architect begins with the fact that a family perhaps could afford six to ten dollars a month for shelter; he is then faced with designing a housing

solution that will be possible within that monthly payment constraint.

The second way that this model differs from the traditional is that it provides a range of shelter solutions that can be produced by the occupant himself with a minimum of outside help, once the framework has been established. Thus, occupants can build up an equity of independence and freedom from constant government assistance. The minimum shelter approach has already been tested with AID and FCH help in Panama and experience shows that tenants do not let their plots remain barren for very long. They make continual improvements on their dwelling units, bringing them up to a standard level on their own, over a period of time.

It may seem that the cooperative approach, in which people band together, and the unaided self-help, minimum shelter model for housing, in which residents operate individually, are contradictory, even mutually exclusive. This is not so. Cooperatives can work to further the minimum shelter model through cooperative land tenure, construction, savings and credit, and production. A cooperative system will provide far more resources than the individual could ever put together on his own; at the same time, lets the individual produce his own home.

Both cooperatives and the minimum shelter approach have been used before. Cooperatives have enjoyed success in Latin America but they have primarily served middle- and upper-income families. The standard cooperative housing program has been designed for families just above those served by government programs and just below those served by local private housing finance institutions, such as savings and loans.

Minimum shelter has been produced in many countries through aided self-help programs, often with AID support for "pilot" projects. However, aided self-help programs which require a great deal of government administrative support have not been successful on a large scale in developing countries (with the possible exception of Puerto Rico).

The minimum shelter approach proposed by FCH differs from traditional aided self-help. In the new approach, the government provides a framework of land, utilities and credit and leaves the housing solution to the individual and the private sector TSO.

In recent years, this approach has become more accepted by international agencies concerned with housing. IDB, OAS, and the UN endorse versions of the minimum shelter model in their current policy statements. The World Bank is now providing financing for "site and service" programs. AID, as an institution, also accepts this minimum shelter approach. During the past two years, FCH has assisted AID in preparing feasibility studies in a number of countries that recommended the minimum shelter approach with various combinations of site and services, shell housing, and expandable core houses. In three countries, Peru, Colombia and Panama, AID has recently approved development loans to support housing programs that use this concept.

Unaided self-help has been taking place in Latin America for years. The 1972 World Bank sector working paper Urbanization comments on "the extent to which dwellings, albeit of 'substandard' quality and subject to great overcrowding, have in fact been provided by the unaided self-help efforts of migrants .... The migrants appear at least as much to be providing a solution as to be creating a problem."

Cooperatives can play an important role in institutionalizing the unaided self-help approach. The tendency, in providing housing, has been to evaluate the ability of families to pay for a house on the basis of their cash incomes. When labor and contribution of materials are calculated, however, a family's income can grow by as much as five times. A cooperative framework can help to harness this elusive but valuable "income" and turn it into a new housing unit.

The second way in which FCH's approach differs is that it attempts to bring to bear the substantial resources of the private sector. So far, the government has provided most of the funds to build low-income housing. This has been singularly unsuccessful. It has not been possible to secure adequate funds from public revenues for the production of sufficient housing for the low-income consumer. Further, government programs have produced a "standard" house, one that is much too expensive for most low-income families. The delivery of government housing programs has been laden down by red tape and the attitudes of many government officials have been unresponsive to the needs of the low-income recipient.

At the same time, there is a substantial amount of local money available in Latin American countries through banks, savings and loans, and other private sources. So far, most of this money has gone to finance upper-income housing. Several countries are now experimenting with new laws and regulations that would channel this money to lower-income housing. It should be pointed out, however, that the ability of the private sector to produce low-cost housing has been tested on only the smallest scale; nevertheless, the potential is promising.

TSO's could play a prominent role in making use of rechannelled private sector money. Perhaps the most important contribution of cooperative housing in Latin America and the Caribbean would be to show that housing for low-income residents can be a good investment and that poor families will be responsible in repaying loans under the right conditions. This in turn would cause local financial institutions to have more confidence and therefore provide credit at this level.

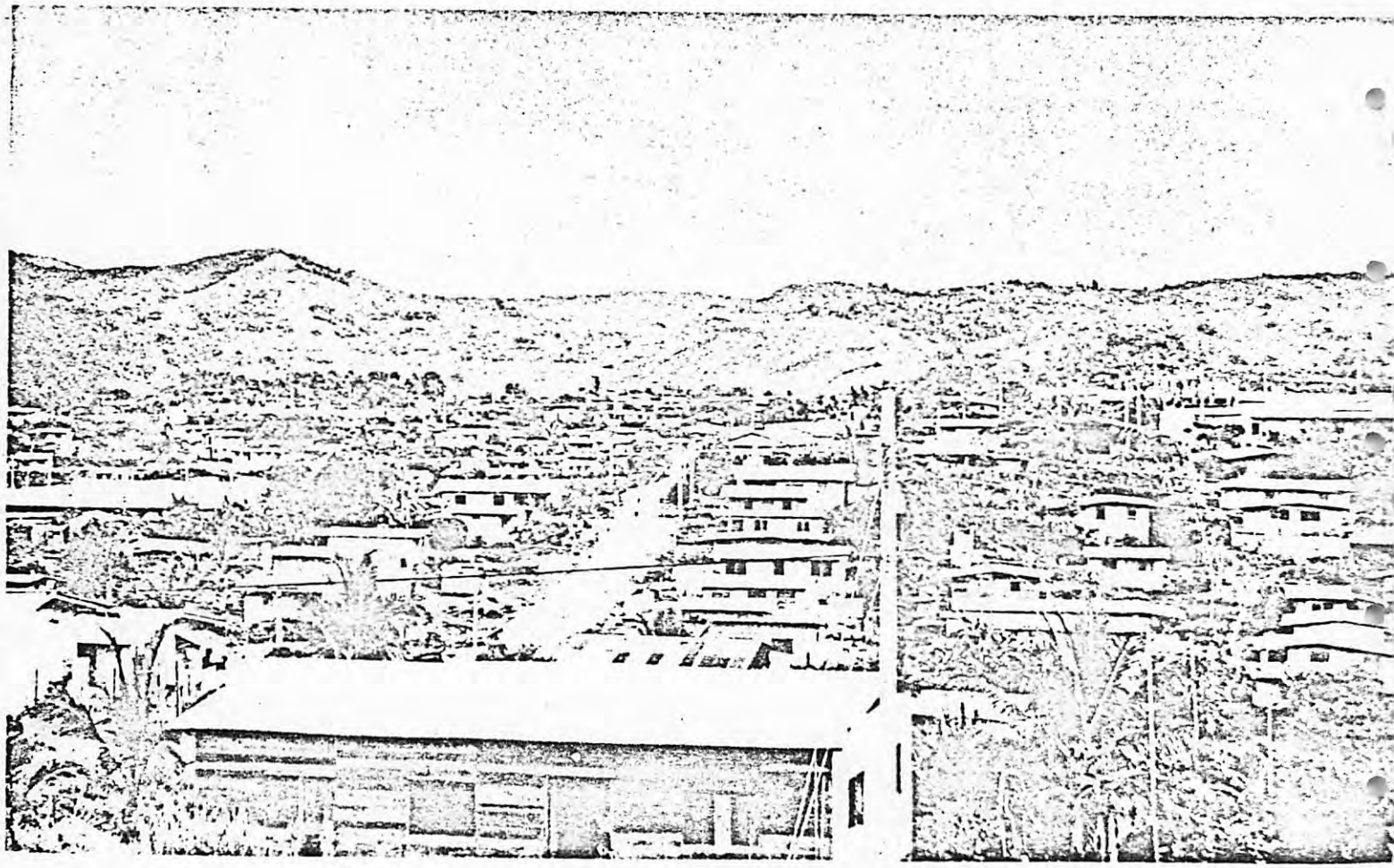
Over the years, FCH has been involved in laying the groundwork for many of these approaches. FCH has assisted in the creation of cooperative housing TSO's in several countries. These TSO's have successfully completed cooperative housing demonstration projects, mostly with financial support from AID. Several TSO's have also developed important locally financed housing programs especially in Chile, Brazil and Colombia.

However, FCH has assisted AID in other housing activities that were not strictly "cooperative housing." For example, FCH worked with AID to pioneer a "minimum shelter" program in Panama starting in 1966. Under this program, existing squatter areas were improved with new streets, water systems and home improvement loans of less than $1,000 per family. New communities were developed for very low-income families providing several alternative solutions, ranging from simply a lot with basic utilities to "shell" houses and "core" houses in the $700 to $1,000 range which were completed by the participants self-help. Also in Panama, FCH assisted AID and IVU in developing a new rural cooperative housing program that produced houses ranging from $300 to $1,000 each.

FCH has also assisted AID and host governments in preparing feasibility reports and/or loan implementation plans for minimum shelter programs in Colombia, Peru, Ecuador, Honduras, Morocco, Chad, and Vietnam.



Nuevo Veranillo, 1966
First residents arrive.



Nuevo Veranillo, 1972. Same street showing improvements, mostly through self help efforts of residents.

II. RECOMMENDATIONS

As a result of their experience and the analysis found in this report, FCH makes the following recommendations to AID with regard to their involvement in low-income housing in Latin America and the Caribbean.

Recommendation No. 1, Revised AID Housing Policy: AID should draft a revised housing policy for its Latin American Bureau that limits development loan and grant assistance to low-income housing exclusively. Middle- and upper-income housing programs should be supported from other sources, including the AID Housing Investment Guaranty Program. The use of local sources within Latin American countries should be increased. The policy should include a definition of low-income housing that would relate the maximum housing unit cost to the income distribution pattern within each country. Even allowing for differences in the cost of labor and construction materials, a maximum unit cost for the region could be expected to be about $3,000 under such a policy.

Recommendation No. 2, Minimum Shelter Approach: AID loans and grants for housing in Latin America should be made in support of the minimum shelter approach and AID should discourage requests for loans to continue the traditional approach to housing. This would result in increased AID funding of site and services and expandable core housing projects and would discontinue funding of standard housing units.

Recommendation No. 3, Increased Private Sector Housing Effort: AID should greatly increase its support for private sector activities in the low-cost housing field and proportionately decrease their support of public sector, government-sponsored housing projects. The government housing institutions in Latin America have received substantial sums from AID and IDB during the past 12 years and have now reached a leveling off in production capacity in many countries. There are certain chronic problems with government housing institutions in Latin America that show little hope for improvement. These include an extremely high rate of turnover of key personnel: a high proportion of inexperienced "political" appointees in key positions: inefficiency in general administration as a result of governmental red tape in hiring, purchasing and executing construction contracts. Many government housing institutions also have serious problems in selecting responsible purchasers for their homes and in making collections after the projects are occupied. AID should continue providing technical assistance to those government agencies who demonstrate a real interest in improving their performance but should generally reduce loan support in favor of increased private sector programs.

Private sector housing programs throughout Latin America are more efficient in their development and administration. They have the potential to expand considerably. One important advantage of the private sector is its capacity to generate self-financing and thus, not to rely on long-term subsidy. AID should provide increased selective, financial support to non-profit, private sector organizations, such as

cooperative housing TSO's, community development foundations, labor union groups, and others which have demonstrated interest and competence in producing low-income housing. Cooperative housing TSO's could play an important role in such an expansion of privately sponsored, non-profit housing.

It may also be possible to encourage profit-motivated, small entrepreneurs and housing developers to enter the very low-income housing market by making land available and creating a suitable framework through local guarantees, tax incentives and perhaps some subsidies.

Recommendation No. 4, Support and redefinition of the TSO: AID should continue their support of technical service organizations while at the same time encouraging them to expand their role as advocates of the minimum shelter approach and expediters of housing for low-income families. The TSO has primarily been involved in the development of moderate- and middle-income housing. If AID is to support only low-income housing and minimum shelter, the TSO role must be redefined. The main function of existing TSO's should continue to be to provide professional assistance to cooperatives and private groups in the development and organization of their housing programs. They should remain essentially private, non-profit organizations with some government representation on their boards of directors.

However, the existing TSO's should direct some energy toward serving a much lower income level, and to advocating the "minimum shelter" approach. TSO's can also develop such new techniques as "open co-ops" or "linked

housing cooperatives." These programs provide a range of services, such as shelter, health assistance, employment counseling, food services, and savings and credit services, all within the cooperative framework.

TSO's have already established their ability to assist in the development of housing and are proving effective in seven Latin American nations. They are now set up to be self-supporting; if they are to redirect their activities to serve low-income families, as this report recommends, some subsidy will be necessary. This would be a vital form of support that AID could provide initially.

Recommendation No. 5, New Regional Channels for AID Housing Loans: AID should consider possible new channels for development loan housing programs in Latin America to help the private sector do more in the field of low-cost housing. The traditional pattern for AID housing loans has been through national governments to national housing institutions or in some cases through the housing institutions to cooperative TSO's or savings and loan associations. If the private sector TSO's are to play a more important role in low-cost housing, they need increased control of whatever exterior finance is available in order to effectively carry out their programs.

INTERVICO, the Inter American Cooperative Housing Association, is a private sector, multi-national, non-profit organization with membership consisting of TSO's from the following countries: Jamaica, Honduras, Panama, Colombia, Venezuela, Chile, and the United States. INTERVICO recently received a grant from the Inter American Foundation (U. S.

government owned corporation) for feasibility studies on producing housing for very low-income families. INTERVICO member organizations in Latin America have completed or have under construction more than 15,000 units of cooperative housing with a total value exceeding 40 million dollars. Although INTERVICO is a new organization, its Latin member TSO's have been established over the past 12 years and their professional staffs include some of the best Latin American housing experts, many of whom have years of experience in the field.

FCH strongly recommends that AID consider a development loan to INTERVICO in the range of 5 million dollars, to be used as a revolving fund for development of very low-income, self-help housing activities. An important element in such a program would be to provide credit for home improvement and self-help housing in marginal areas. INTERVICO's role would be that of primary borrower and broker, making sub-loans to its member TSO's in those countries where potential projects have been identified. Sub-loans would be made to TSO's who are able to obtain the guaranty of their government or of local banking institutions on repayment. The TSO's would relend to cooperatives, community organizations and other private sector groups with demonstrated interest and competence in producing low-income housing. A substantial local contribution from savings programs would be required on all sub-projects.

There is some precedent for a loan (or grant) program of this type. AID has made loan and grant funds available to the Pan American Development Foundation (PADF), a private regional organization, for relending to private groups in Latin America.

Recommendation No. 6, Country Loan Programs: FCH recommends AID loan support for very-low-income private sector housing activities in the following countries: Guatemala, El Salvador, British Honduras Bolivia, Honduras, and Ecuador.

These proposed loan programs are described in considerable detail in Volume II of this report and in special reports prepared for AID by FCH or with FCH assistance. All these programs have certain elements in common. They would produce very low-cost housing ranging from $500 to $2,500: they involve community organizations and cooperatives in self-help project development: they include related activities such as water, streets, and community services as well as housing; and they all involve the application of cooperative techniques in their execution.

Recommendation No. 7, Regional Technical Assistance: FCH recommends continued AID support of a regional approach in providing technical assistance in cooperative housing and low cost housing. There is a continuing need for short term assistance on special problems in countries with established programs; AID should also respond to new requests from countries just starting cooperative or minimum shelter programs. There is also a need for regional training activities, workshops, and conferences to assist in the exchange of information among the countries in the region on the problem of housing for low-income families. Several countries that would benefit from this assistance are identified in Volume II.

III. SOME GENERAL PROBLEMS AFFECTING THE PRODUCTION OF HOUSING FOR VERY LOW-INCOME FAMILIES

Many low-income families in Latin America are living in almost sub-human conditions. The lack of housing is just one of several inter-related problems that confront them. These families also need jobs, job taining, health services, schools, waste disposal systems, clean water, improved streets and electricity.

Although the crisis has been described primarily in urban terms, it is really the direct outgrowth of the sub-human quality of rural life. The conditions in the countrysides of Latin American and Caribbean nations have improved very little during the last 20 years. According to the United Nations, more than two-thirds of the rural population has an average annual per capita income of less than 90 dollars. If this is the average, then many rural families must have incomes of roughly five to six dollars per month. They lack the most minimum requirements of a decent life and have little hope for improvement in the forseeable future.

With this in mind, it is not surprising that the migration of people from rural to urban areas is continuing at an extremely rapid pace, causing many urban areas to increase at the rate of five to seven percent a year. Much has been written on the problem of rural to urban migration and studies have been made to show how this can be prevented in developing countries. However, many development experts now agree that migration is a necessary and perhaps even desirable part of the

growth process. It is felt that governments should accept this fact and use their limited resources to control and improve the situation. One particular growth trend to encourage is the expansion of provincial capitals and small cities where some of the basic social and economic facilities are less overloaded and more desirable than in the large national capitals.

The rural urban migration has been coupled with another dramatic trend, the explosive growth of the population in general. The population of Latin America will more than double in the next thirty years and will exceed 600 million persons by 1990. The birth rate is the highest in the world, over three percent per year.

The result of these twin trends has been a dynamic reshaping of most large Latin American cities. Almost 50 percent of the population now live in these urban areas; between 20 and 40 percent of them dwell in squatter areas and shanty towns on the periphery of urban centers. These squatter areas will double over the next ten years, as rural to urban migration and population growth continue.

Even though living conditions in these squatter neighborhoods are often very bad, urban life still offers considerable hope for improvement to many families. There are more job opportunities, higher wages, potable water, schools and some health services, which are often lacking in the countryside.

The Need for Housing

Most of the research on housing need in Latin American countries has related need to standard housing. In order to establish a precise deficit figure, it is first necessary to agree upon a definition of a "standard house." An area where less research has been performed is relating need to the environmental or minimum shelter approach. This has been accomplished primarily through population figures, although defining the housing deficit in general becomes much less important under the minimum shelter model. In any case, estimates on need based on both approaches are presented here.

The "Standard House" Need

On the assumption that about 45 percent of the urban population and 50 percent of people in rural areas live in inadequate housing, a United Nations report estimated the backlog of need in Latin America in 1960 to be about 20.3 million units, of which 616 million were in urban areas and 13.7 million in rural areas. Tables 1, 2 & 3 from the U.N. study show the average annual output of dwellings required to eliminate this deficit over a period of 30 years in both urban and rural areas. The housing requirement necessary to accommodate the increase in population resulting both from natural increase and migration to the cities in the period 1960-1975, and to provide for the gradual replacement of the present stock of good housing over a period of 30 years in urban areas and 20 years in rural areas is graphically shown by these charts:

TABLE 1

Number of dwelling units required at specified years to house urban and rural population of Latin America

	1960	1965	1970	1975
Housing requirements (millions of units)				
Urban areas	14.7	19.4	25.7	33.4
Rural areas	27.2	29.6	31.0	32.3
Total	42.2	49.0	56.7	65.7

TABLE 2

Number of additional dwellings required in urban areas, Latin America, 1960-1975

	Average annual requirements			Total requirements 1960-1975 d/
	1960-1965	1965-1970	1970-1975	
	Dwelling units (millions)			
Dwellings needed to house population increase a/	0.9	1.3	1.5	18.7
Dwellings needed to replace obsolescent housing stock b/	0.3	0.3	0.3	4.1
Dwellings needed to remedy existing shortages c/	0.2	0.2	0.2	3.4
Total	1.4	1.8	2.0	26.2

a/ Number of needed dwellings calculated by dividing the average annual population increase by an assumed average household size of 4.7 persons.

b/ Calculated on assumption that housing for 55 percent of 1960 urban population will need to be replaced over a period of thirty years.

c/ Calculated on assumption that sufficient dwellings need to be built over a period of thirty years to house the equivalent of 45 percent of the 1960 population.

d/ Computed from unrounded data.

TABLE 3

Number of additional dwellings required in rural areas, Latin America, 1960-1975

	Average annual requirements			Total requirements 1960-1975 d/
	1960-1965	1965-1970	1970-1975	
	Dwelling units (millions)			
Dwellings needed to house population increase a/	0.4	0.3	0.3	4.8
Dwellings needed to replace obsolescent housing stock b/	0.7	0.7	0.7	10.3
Dwellings needed to remedy existing shortages c/	0.5	0.5	0.5	6.9
Total	1.6	1.5	1.5	22.0

a/ Number of needed dwellings calculated by dividing the average annual population increase by an assumed average household size of 5.2 persons.

b/ Calculated on assumption that housing for 50 percent of 1960 rural population will need to be replaced over period of twenty years.

c/ Calculated on assumption that sufficient dwellings need to be built over a period of twenty years to house the equivalent of 50 percent of the 1960 population.

d/ Computed from unrounded data.

Minimum shelter

FCH has taken population figures to demonstrate the housing need for the minimum shelter model.

Based on FCH experience in Latin America and recent research, the immediate need for new or improved homes in urban areas is about 4.8 million, calculated as follows:

The total population of Latin America is currently estimated at about 200 million and is expected to increase to about 600 million by 1990. An estimated 40 percent of the total population now live in urban areas (defined as communities with more than 20,000 people). There are approximately 5 persons per family, thus yielding an estimated 16 million families living in urban areas at the present time. The estimated number of urban families living in inadequate shelter varies considerably from country to country and much depends upon the local definition of adequate shelter. However, a conservative estimate for the region would be that at least 30 percent are living in very bad conditions without minimum sanitation services and with extreme overcrowding. Therefore, there is a definite, immediate need for 4.8 million urban housing "solutions" or at least programs which offer these people some hope of a better place to live.

The need for housing in rural areas would be calculated as follows: 60 percent of the total population of 200 million are living in rural areas. At approximately 5 persons per family this would result in roughly 24 million rural families, with at least 75 percent living in inadequate housing

without minimum services. The rural housing need can therefore be estimated at about 18 million units for the region.

The regional estimates mentioned above are useful for a general understanding of this problem. However, a country by country analysis is also necessary to appreciate the intensity of the problem in certain areas. Guayaquil, Ecuador, for example, has an estimated 400,000 people living in extremely poor conditions out of a total population of 700,000.

The Pan American Union estimates the current deficit in housing at about 20 million. The Inter-American Development Bank agrees that the need is for around 20 to 25 million units.

The Effective Demand

Effective demand is defined as the number of families who need, want and can afford to pay for a better place to live. The incomes in Latin America are so low that most families can afford very little for housing. The United Nations 1971 publication on income distribution in Latin America divides the population into five categories and gives the following chart to show aggregate incomes for the region.

Table 4

The Distribution Of Income In Latin America

Income group	Percentage of total income received	Average Income (Regional average = 100)	Average per capita income* (dollars)
Lowest 20%	3.1	15.5	60
30% below the median..	10.3	34.0	130
30% above the median..	24.1	80.0	310
15% below the top 5%..	29.2	195.0	750
Top 5%	33.4	670.0	2,600

*These values are for 1965 but are expressed in terms of 1960 dollars.

In the traditional approach to housing, effective demand is defined as the housing market. Analysis begins with the design for a standard house, sets firm cost estimates and then tries to estimate how many people can afford that unit. For example if 10,000 families in the market area can afford a $5,000 standard unit, a 1,000 unit project might be considered. In other words, planners begin with the house and then look for people who can afford to buy it.

In the minimum shelter approach programs start with the people and then design several alternative housing solutions to fit their economic situation.

The 1970 report on Ecuador titled "Site and Service and Minimum Shelter Study," prepared with FCH assistance, included the chart, shown in Figure 1, which related the capacity to pay for a house to the distribution of income among the urban population.

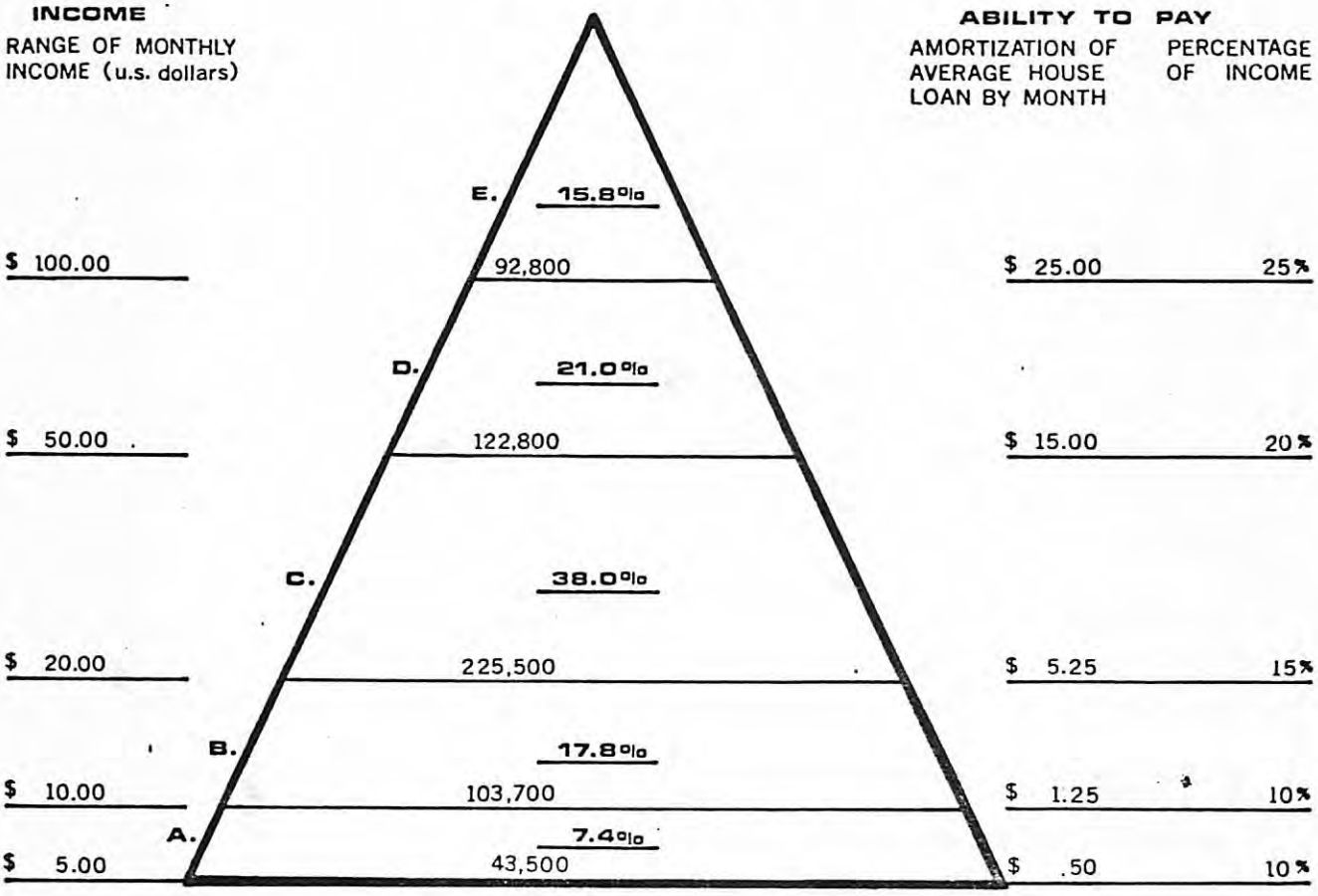
The Figure 1 chart shows that more than 63 percent of the urban population in Ecuador make less than 1,000 sucres (about 60 U.S. dollars) per month and 38 percent (level three) earn between 400 and 1,000 sucres. These latter families can afford to pay a small amount for shelter. On the basis of these figures, FCH recommended that the government provide lots with utilities, costing about 75 sucres or five dollars per month, for level three families. Other alternatives, such as expandable core houses, were designed to fit people in the level four category.

FIGURE 1

DISTRIBUTION OF INCOME RELATED TO ABILITY TO PAY FOR SHELTER

ECUADOR

URBAN POPULATION



Gainfully employed urban population of Ecuador, total: 588,300
Source: Encuesta de Hogares, National Planning Board, 1968

The effective demand in each country must be determined after a careful analysis of the income distribution, the cost of construction and family budgets. For example, existing programs producing standard houses at the minimum of U.S. $2,500 are beyond the ability to pay of most citizens in Ecuador. If present programs cannot reach large segments of the population with "standard houses", minimum shelter should be designed to fit the ability to pay of the target groups. In most countries there will still be many families at the very lowest level (levels one and two) who cannot pay anything for housing and only a charitable program can reach them.

Land Problems

It is clear that governments cannot provide decent houses for most urban families. However, they could do much more in providing a place for people to build their own houses. At present, it is difficult to find good centrally located land , and available for low-income housing in most large urban areas in Latin America. Land surrounding many large metropolitan areas is often held by wealthy families who are speculating that it will be sold at some future date for huge profits. This, in turn, increases the competition for isolated parcels that are available within the metropolitan area and the price goes up accordingly. Very few governments in Latin America have taken the necessary steps to solve this problem. These would include:

(a) a firm land reform policy including tax reforms and use of expropriation;

(b) creation of "land banks"; and

(c) better regional planning.

Much of this could be accomplished without outside assistance from international agencies and would fall into the category of national self-help.

Local action is especially important in this area because it has been demonstrated in several countries that when a poor family has secure land tenure they can solve their own housing problem over a period of years if they are able to find employment.

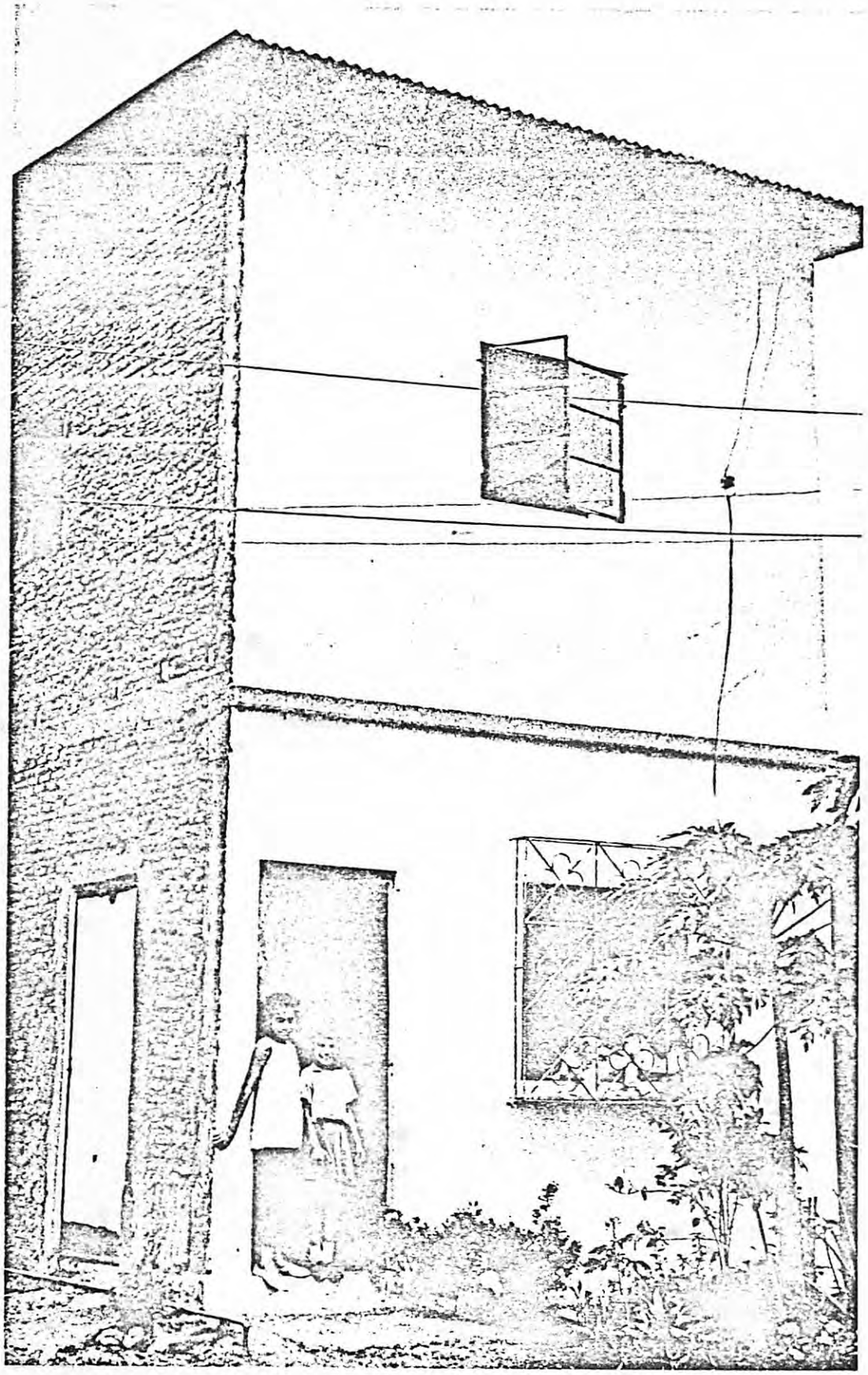
Housing Finance Problems

Almost every country in Latin America has several local institutions that provide money for upper-middle- and upper-income housing. The amount of money available in many countries for housing at this level is substantial. Social security funds are used for upper income housing finance in many countries, normally for housing of $16,000 per unit and above. Many countries also have housing banks or housing finance institutions providing millions of dollars for higher income apartments and condominiums often costing more than $15,000. Private banks and savings and loan institutions in many countries also have considerable sums being channelled to what is often called "middle-income" housing. If one considers the income distribution charts shown in Section III, it is clear that the local money is being used for upper-income housing with very little flowing to low- or even low-middle-income housing.

The marginal population does not have access to credit for housing from the sources mentioned above. They are forced to go to neighborhood money lenders and borrow at incredibly high interest rates in order to buy materials, a little at a time, which they in turn use to build fairly substantial housing in what may appear to be a "squatter area." Housing of this type has been termed "unaided progressive self-help housing" in several FCH reports. The end product is often a very adequate home that meets the minimum requirements of its occupants. Some governments are beginning to view this process in a positive way and are looking for ways to control and encourage production of housing through this system.

Problem of Linkage

Quite often government housing programs designed for very low income families fail because there is no adequate link between the government institutions and the individuals living in a given marginal area. Programs are designed by officials and technicians who are not fully aware of the needs and desires of the potential participants. Even when a program is well planned, it can often falter during execution because of the breakdown of communication between the government and the individual. There is a need for intermediate organizations such as community associations and cooperatives to serve as direct links between the program administrator and the program client. Most marginal areas in Latin America have a variety of community organizations with overlapping interests, authority and projects. However, they are very rarely incorporated into housing programs in a meaningful way.



Many low income families in Guayaquil are solving their housing problems by unaided self help. This house in Guayaquil, Ecuador was completed by the family's own efforts.

The "Patron" Attitude and Housing

The "Patron" attitude is still evident in some government-sponsored housing programs in Latin America. In these programs, government officials and political leaders promise to provide a decent home to all poor families, who, as a result, come to feel that the government (as "Patron") is obligated to give them a house. Traditional housing programs for low-income families have been carried out against this background, with government housing institutions producing several thousand new "standard" units (often with AID or IDB loans) and then selecting the lucky occupants. In many cases the new homeowner is either "over-income" (could afford more expensive housing financed from other sources) or "under-income" (cannot afford monthly payments). In projects with a high percentage of over-income families, the "standard" house is immediately improved to include a carport, maids quarters and other frills.The new homeowner's monthly car payment can equal or exceed his home payment!

In projects with a high percentage of under-income families, it is not uncommon to have 60 percent or more of the tenants delinquent in making their monthly payments to the government housing institution; overall project maintenance and appearance are poor. The delinquent homeowners feel they really should not have to pay the government for housing at all: their priorities for spending monthly income are higher for food, medicine, school expenses and consumer goods. Because they are poor, evictions for non-payment are an extremely rare occurrence. However, in the few

instances where sound management does call for evictions, and there are fewer delinquent residents, the collected rents are available to finance additional units.

The saddest feature of programs of this type is that only a small number of low-income families actually receive a house, while the vast majority of poor families continue to live in miserable conditions.

Private non-profit housing programs can help to break the chain of "patron" thinking. They can provide a continuous financing system for new units, one that is more efficient in both production and management than public sector housing efforts. Whereas government housing programs have a high rate of default, the repayment experience for private non-profit sponsors has been very promising.

Decapitalization of Government Housing Institutions

It is very difficult to obtain accurate information on the collection problem in government sponsored housing programs in Latin America. In several countries it is estimated that more than 75 percent of the homebuyers are behind in their payments. This causes a decapitalization of the housing institutions and prevents relending to build new homes for other families. Many AID and IDB loans have been made for housing that could have produced a greater "multiplier" effect if the monthly collections were more effective. When the unhoused are made aware of this, a firm collection policy is accepted.

Another more important problem created by the poor collection record in some countries is the local financial community's lack of confidence in low-income housing programs. Thus, local money (mentioned under III) goes into upper income housing and is not available to low-income families because there is a feeling that they will not meet their mortgage payments. This is not necessarily true. There are private sector and cooperative projects throughout Latin America where the repayment record of poor families is excellent.

Population Control, Employment and Housing

The jurisdiction of housing experts has been confined, often by public opinion, to narrow areas of building codes, master plans and urban infrastructure. Although others have criticized housing specialists when they venture forth to address themselves to the broader issues of population and employment, it is becoming more and more clear that the long range answer to the housing problem for low-income families in Latin America and the Caribbean lies in the areas of land control, employment and family planning.

No amount of outside financial aid will solve the housing problem of these countries until they initiate national programs to control population expansion and relate it to economic growth. The sheer futility of present efforts is well demonstrated by the fact that, in the past ten years, AID and IDB have invested almost one billion dollars in housing in Latin America and met only one percent of the need.

The arithmetic would not be nearly so staggering if zero or near zero population growth could be achieved. In a "typical" small Latin American country with a population of two million, at least 40 percent, or 800,000 persons, desperately need better housing. Estimating a family size of five members, this would indicate a need for 160,000 units. With a significantly decreased population growth, the housing problem in these countries could realistically be solved by providing lots, utilities and expandable core houses at a cost of about $1,500 per family over a 20 year period. This would only require an investment of about 8.5 million dollars per year for an annual production of 8,000 units. This level of investment and production is within the capacity of most countries. At the end of a five year period, the national housing program could shift from production of new units into a mixed program of providing credit for home improvement.

Housing production could also help channel the population into productive jobs. Unemployment estimates range from 12 to 25 percent throughout Latin America and the age characteristics of the population indicate that this problem will get worse in the coming years. Some small-scale efforts have been made to relate the unemployment problem to housing low-income families. More could be accomplished in this area because housing production has a great potential as a major employer of these poorer urban dwellers. One attempt at doing this occurred in the FCH-assisted AID loan program in Panama in 1966. Where efforts were made to incorporate job training and job producing activities into the "housing loan."

IV. TWO CONTRASTING APPROACHES TO THE PROBLEM OF PROVIDING HOUSING FOR LOW-INCOME FAMILIES

A great deal has been written on the problem of providing adequate housing for low-income families in Latin America. FCH has produced several studies and reports analyzing the problem in specific countries and recommended ways to approach the problem. The reports consistently call for attempts to match incomes to house costs rather than trying to match home costs to income.

Traditional Approach

The traditional approach to the problem of low-cost housing in Latin America has been to attempt to provide "standard housing units" to eliminate or reduce the "housing deficit." This approach requires rather arbitrary definitions by technicians and officials of what constitutes a "standard unit." Any house below standard is then considered in the deficit category. Under this concept, the housing deficit in Latin America in 1970 can be estimated at about 25 million units and can be projected to reach about 100 million units by the year 2,000. To eliminate this gap, it would be necessary to construct more than three million new units each year. The cost of a "standard unit" varies greatly from country to country. If $3,000 is assumed as the cost of an average standard unit, it would be necessary to invest about 9.0 billion dollars a year to eliminate the deficit. Obviously, this amount of money will not be available.

Another example of the futility of the traditional approach can be found in the November 1970 report titled: "Final Report, Site and Service

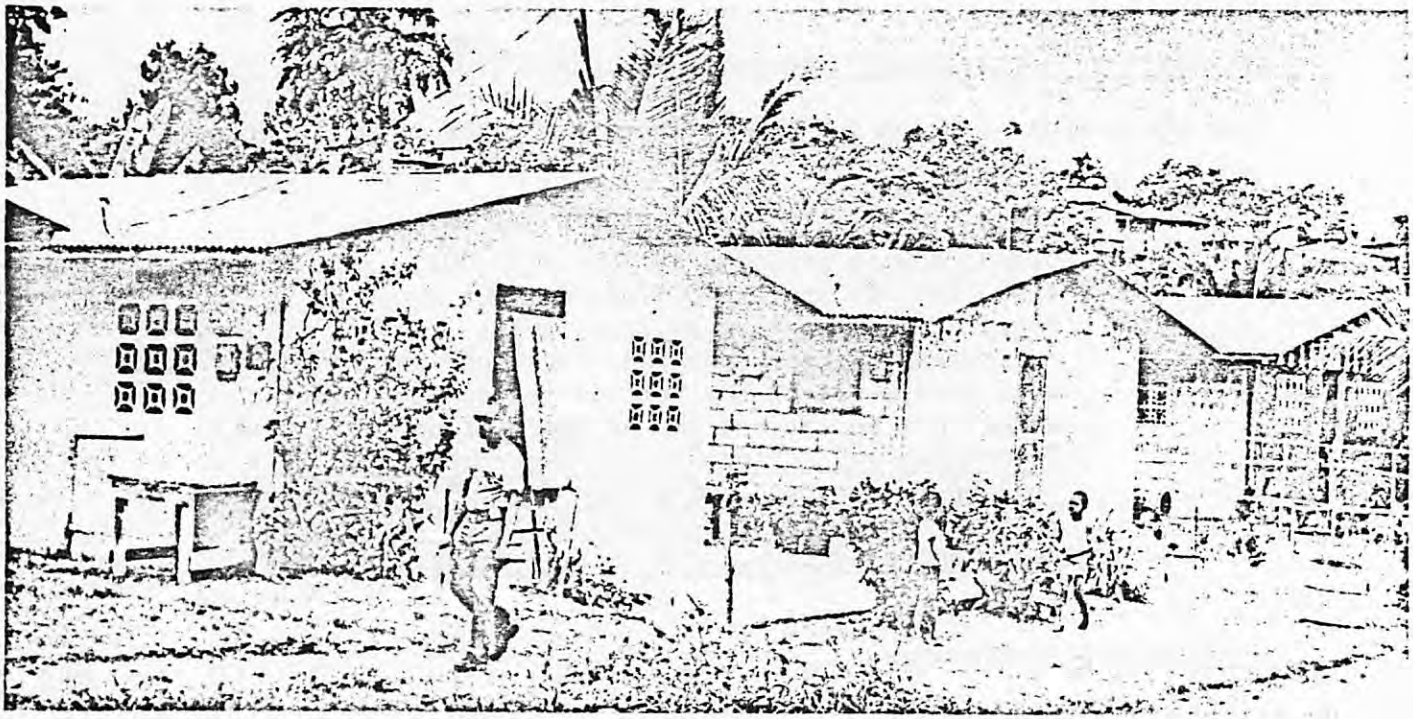
and Minimum Shelter Study", prepared for USAID/Ecuador with assistance from FCH. Under Section V, "Use of Resources", the report states:

> "Using the traditional approach and the lowest standard unit produced by BEV (US$2,500), some 4,500,000,000 sucres (US$180,000,000) would be required to meet this existing need. Present estimates indicate that the 'tugurios' of Guayaquil will double within the next 10 years necessitating investment far beyond the capacity of any government. Therefore, new approaches are needed that will encourage better use of the resources of the people living in the 'tugurios' and recognize the limited repayment capacity of the participating families."

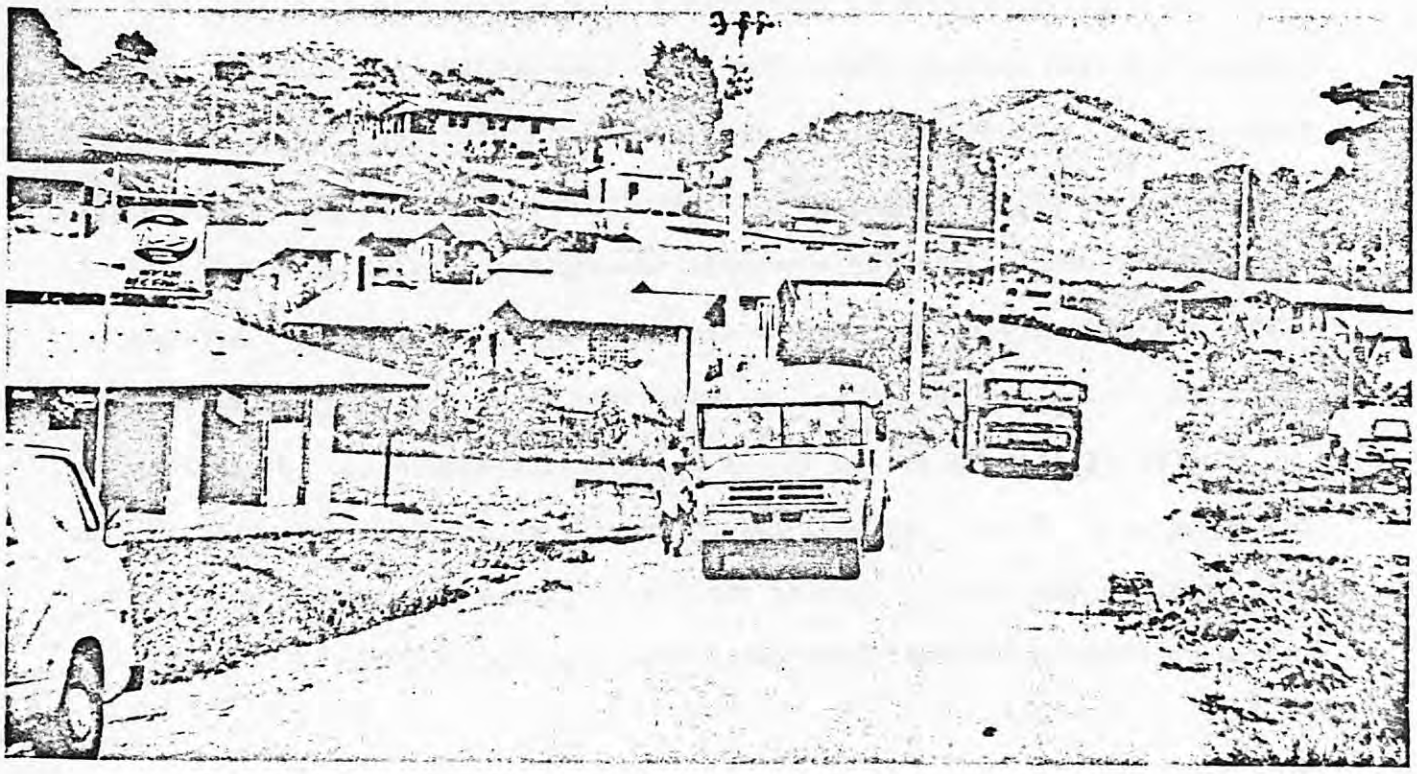
Minimum Shelter Approach

In contrast to the traditional approach, several countries are now experimenting with a minimum shelter or "environmental approach" to the problem. FCH assisted AID and the Panamanian housing institute (IVU) in a pilot program to demonstrate this approach under a 3 million dollar AID loan made in 1966. The basic idea behind this model is that the housing "solution" must fit the economic capacity of the participants. In the Panama pilot program, the target group had incomes ranging from $60 to $150 per month, allowing a monthly payment for housing of between $7 and $15. Several alternate solutions were offered to participants, ranging from only a lot with utilities at about $400 to an expandable core house at $1,000. The emphasis was not on what participants built but instead on where they built. The goal was to provide secure land tenure as well as job training and jobs so that as the family income increased, the occupants would be able to improve their homes over a period of time.

"CORE" AND "SHELL" HOUSES IN PANAMA



Good maintenance on these completed Shell houses indicates pride of ownership - Panama, 1972.



Completed Shell and Core houses, Nuevo Veranillo, Panama, 1972.

The initial appearance of the new communities constructed under the loan was not attractive. However, there has been dramatic steady improvement over the years as shown in the photos.

The Government of Panama and IVU recognized the validity of this minimum shelter approach and developed new areas with their own funds using similar techniques. More recently, they have applied for a second AID loan that will allow a greatly expanded program of this type.

Other institutions interested in housing having adopted the minimum shelter or environmental approach as evidenced by papers presented at the United Nations World Wide Seminar on "Improvement of Slums and Uncontrolled Settlements," in Medellin, Colombia in 1970.

A Working Paper prepared by ICT, The Colombian Housing Agency, describes their "site and services" program as follows:

> Sale of Plots with Services
>
> This system is intended to create a mechanism that may operate as a 'prevention of slums', or in other words, to prepare districts with progressive development urbanization where the specifications are minimal, particularly in quantity.
>
> These urbanized plots have a water supply, sewers, power services, one or more completely paved penetration roads, suitable for truck and bus traffic, and other streets for pedestrian use.
>
> The beneficiary might build a provisional dwelling on the back of the plot, so that little by little he may build his own house on the front end, with technical and social assistance from the ICT.

> Interest rates will not be over 9% per year with maximum mortgage terms of 20 years, granting, in some special cases, a grace period during the first two years of the debt.
>
> With this system it will be possible to reach the lowest income families and to fulfill the conditions of a planned 'slum' which can be improved in a progressive and orderly manner, without land tenure problems and with the possibility of installing community services."

The paper on construction, presented by the Organization of American States, forcefully lays out both the problems and the prospects of the minimum shelter approach, OAS says:

> "The specific remedial measures to be adopted in each case — whether eradication, rehabilitation or renewal — depend on the socio-economic and physical features of the settlement. Among these are its patterns of tenure and land use, time of formation, its relationship to the city and to urban services, and the quality and quantity of structures and facilities — which must be known and considered before deciding on the appropriate solution and setting of priorities. The feasibility of any solution depends on the resources available, the operational capacity of the agencies in charge, and the degree of participation of the inhabitants."

The paper goes on to outline the special importance of technical supervision. It is optimistic in its belief that low-income families can take an active part in building not only their homes but their communities. In fact, through self-help programs, many families have worked together to build vital community facilities. None of this can work at present, the report warns, without technical supervision.

A key factor in the success of the minimum shelter approach is the role of the government. By promulgating standards and regulations

better adapted to local conditions and resources, the construction of minimum shelter can be greatly assisted. In addition, the structure of housing and urban development agencies must be streamlined to improve coordination among government institutions, research centers and private groups.

It is likely that major strides will be made in the minimum shelter approach, the report points out, as progress is made in dimensional and modular construction. These new materials and methods of building will not only speed up construction but make it much easier for unskilled workers to participate unassisted in the completion of their homes.

V. COOPERATIVE HOUSING RELATED TO THE PRODUCTION OF LOW-COST HOUSING

Cooperative Housing and the Systems Approach

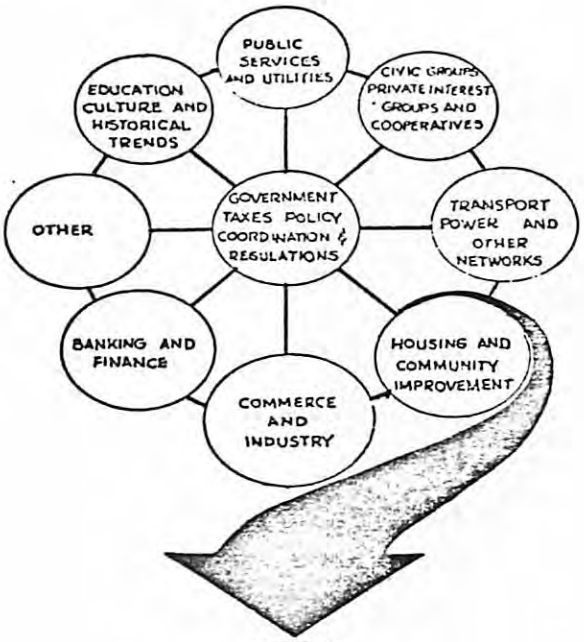
The experience gained by many governments in recent years has demonstrated that isolated efforts to attack the housing problem in marginal communities can have only limited success. A comprehensive or "systems approach" is needed that takes into consideration the problems of urban planning, land controls, land tenure, population control, taxation, job training, relocation of industry and other important areas. The way housing fits in as a sub-system of this larger urban development system is pictured in Figure 2.

Cooperative housing is one further level of the urban housing system and can be an important tool in implementing a comprehensive attack on urban housing problems. Cooperatives are an excellent example of the systems approach themselves, because they can be organized to deal with a multitude of problems -- production, credit, community services, food and health, to name but a few. A concept that is gaining increased credibility is the "open cooperative", in which a range of services to the consumer is provided within a single cooperative structure.

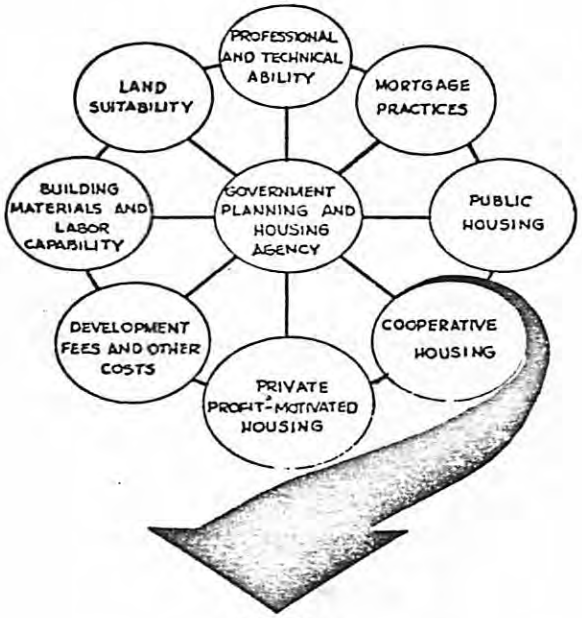
Cooperatives can also further the systems approach because they are designed to identify and harness the tremendous potential of people living in marginal areas.

COOPERATIVE HOUSING AS A COMPONENT OF URBAN DEVELOPMENT

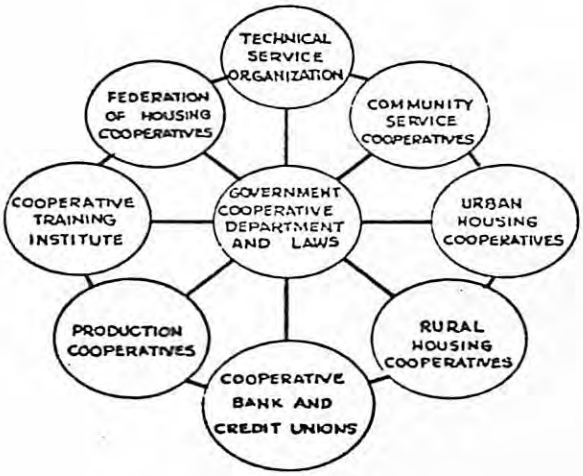
A. URBAN DEVELOPMENT SYSTEM



B. HOUSING SUB-SYSTEM



C. COOPERATIVE HOUSING COMPONENT



Unfortunately, the systems concept has been stymied in many Latin American nations because of the lack of effective central control. AID efforts at "sector lending" will certainly encourage a more comprehensive approach to housing in several countries, although loan policy shouldn't be limited only to sector lending. There are situations where a boost from an AID loan to one component of a system could cause a chain reaction that would lead to improvement throughout the sector.

Application of Cooperative Techniques for Low-Cost Housing

Cooperatives and cooperative housing techniques can be an important element in a comprehensive approach to the problem of improving the housing of families living in marginal areas because it helps such people make better use of their resources.

Cooperative housing can be broadly defined as privately owned housing that is democratically controlled by its residents. The members of the cooperative run it by electing the board of directors, which, in turn, appoints a manager. Each member receives regular, audited reports so that he can assess the economic viability of the organization. The cooperative has the option to repurchase the homes of retiring members, thus controlling the sale and value of units.

The main reason for investing in a housing cooperative, or any type of cooperative for that matter, is to get a product or a service, like a house. Dividends are minor, although they can accrue. Generally, savings and earnings are distributed to members on the basis of their use

of the cooperative, not on the basis of their investment. An FCH paper on cooperatives presented at the 1970 United Nations seminar summarizes the benefits of cooperatives.

> "The benefits include not only financial savings, but also the satisfaction, as a member-owner, of having something to say about the kinds and qualities of services to be made available. Cooperatives enable people to become active, participating owners of — not merely passive investors in — the economic machinery that serves them."

The cooperative can help people learn to accept economic, social and civic responsibilities on an individual and collective basis. Through the cooperative, members learn to work together to achieve not only immediate material benefits in the construction or improvement of their home, but also to reach the objective of helping each other in the achievement of a better and a more pleasant community life.

The cooperative serves to develop leadership because officers are democratically chosen by the members and responsible to them. In practice there are many ways that the basic cooperative principle can be applied to help people in marginal areas work together to improve their housing.

1. Cooperative Education and Training

General cooperative education and training programs can help residents of marginal communities establish a framework within which they can identify the priority needs of their community. Individual cooperatives of different types can then be formed to allow the residents to meet these needs, such as credit cooperatives, consumer cooperatives, production cooperatives and housing cooperatives.

2. Land Tenure and Speculation

Cooperatives can make an important contribution toward improving the situation of land tenure in marginal communities. By forming a cooperative, it is possible for a group to purchase land that might not ordinarily be available to individual families. In some countries, governments have first purchased large tracts of land from private owners and then have made individual lots available to relocated families from marginal areas. If there are no effective restrictions and controls on resale, a common result is that the resident family sells its lot to a local "business man" who soon acquires several lots which he in turn rents at high cost to poor and needy families. Cooperatives can offer a way to prevent this from happening by holding all lots under a global or single mortgage and by requiring that families leaving the area must offer their lot to the cooperative before offering the lot for resale on the open market. In this way speculation is avoided and the lot continues to be available for families needing special help.

3. Cooperative Savings and Credit Institution

A surprising number of families living in marginal communities have regular income. They can be encouraged to save small amounts, especially if the savings program is directed toward improving their housing situation. Cooperative credit institutions can offer a way for these families to save toward a down payment on a better home or provide a source of credit to purchase materials for self-help home improvement. For example, small loans can be made for installing water or electric lines, a concrete floor or a new roof.

4. Production Cooperatives for Building Materials

There are several examples in Latin America where people living in marginal communities have formed cooperatives for the production of building materials. Their products have included: concrete blocks, doors, window frames, roofs and tile. In the most successful production cooperative members are able to obtain materials for self-help home construction which they otherwise could not afford. A complementary activity of the production cooperative can be the mass purchasing of certain materials -- such as cement. This allows considerable savings when compared to similar purchases made by individual families. However, many of these production type cooperatives have not been successful, because they lack technical guidance and good business administration.

5. Cooperative Techniques and Mutual Self-Help Construction

The cooperative framework offers an ideal way for families in marginal areas to improve their homes by mutual self-help. Through the cooperative they can secure technical services not available in the community, such as architectural and engineering advice. The cooperative can also be used to purchase materials on a mass basis and to secure the contracted services of skilled workmen, such as carpenters and masons, who in turn can help the cooperative members in their home construction or improvement activity.

6. Cooperative Housing Management Techniques

After a group has successfully secured credit and materials and has completed construction of their homes, cooperative techniques can

be used in the administration of the project. The cooperative can provide the maintenance of common areas or other new community services. When the cooperative has been able to obtain outside help for the financing of home construction, the cooperative can act as a collection agent, receiving money from its members and then making one monthly payment to the lending institution. This offers more security to the lender and reduces the chance of a poor repayment record that might later prevent new loans.

7. Cooperatives and Community Services

Often the success of one type of cooperative can lead to the development of different types of cooperatives in the same community that serve other needs. For example, a successful housing cooperative may be able to provide leadership in the development of a consumer cooperative that can offer the community better food at lower prices. It might also serve as the base for a production furniture, sewing or handicrafts cooperative that could produce new income for its members. In Latin America cooperatives are sometimes used by families in marginal areas to obtain electrical and water service. Cooperatives could also be developed for schools, transportation and recreation.

The Need for Local Technical Service Organizations

Though recent experience has shown that cooperatives can contribute a great deal to help people of marginal areas solve their own problems, there have still been many examples of failures where the potential for

success was high. Probably the single most important reason for failure in a cooperative enterprise is the lack of a permanent local institution that can provide the competent technical skills needed for carrying out continuing cooperative programs.

In many countries successful cooperative housing programs are now underway with the help of permanent, local Technical Service Organizations (TSO's). TSO's are assisting in the development of cooperative housing activities by providing a broad range of skills that include legal, organizational, educational, architectural, engineering, financial and management administration. Generally they are private, non-profit institutions whose identity of interest is with the members of the cooperative.

In Latin America a substantial number of cooperatives for better housing are being formed. Many of them are in marginal areas. Their members show the energy, desire and motivation to work hard to obtain homes. Though some have successfully organized a co-op credit union or store, they often fail or take years to develop the much more complex housing cooperative. When there is a success, it is usually because a far greater effort was made than was needed. In a technical service organization (TSO) had been used for the cooperative housing project, this might have been avoided.

A TSO can serve its cooperative client in many ways, particularly in the arms of promotion, determining feasibility, management and special projects. For example, the technical service organization would help in land

selection and purchase and obtain firm commitments from lenders for construction and long-term financing. The TSO could approve final plans, specifications and cost estimates and assist in administering the self-help construction work. Once the project was completed, the TSO would establish the selling price, undertake a sales program to obtain the necessary number of members and set up a savings program to assure that occupants could make their down payments and monthly payments. An important role that the TSO could play would be in training the new board of directors in its responsibilities and maintaining continual instruction for new directors and homeowners.

One of the major functions of the TSO would be promotion. On one level, this would mean promoting the individual cooperative to bring in new members and owners. On a larger level, the TSO could serve as an advocate and a lobby for better legislation on behalf of cooperatives and acceptance of the cooperative concept by a wider audience.

New TSO's can be established by drawing on the experience of the many existing organizations working in the cooperative field. A staff need not be large at first, although the TSO director should have a wide range of skills in several of the areas that have been enumerated above. Additional services could be contracted out to professionals in the architectural, legal or promotion fields. The unpaid board of trustees would be persons interested in cooperative housing drawn from the local community.

The start-up costs of a TSO are normally defrayed through grants from an interested agency or a private source. Afterwards, TSO services

are paid out of construction financing funds, and thus charged against future homeowners. Normally, TSO services amount to about three or four percent of the total project cost.

Since TSO's have normally served the middle-income occupant, it has been a valid assumption that the fee could, in effect, be a component of the monthly mortgage payment. If the TSO is to serve the low-income cooperative, as this report recommends, this assumption is probably no longer correct. Some form of subsidy is likely to be necessary to enable TSO's to work with low-income homeowners.

TSO's and Low-Income Projects

Programs developed by the TSO's have so far focused mainly on urban middle-and low-middle-income families. However, there are already some examples of successful use of cooperative housing techniques by TSO's to service low-income families. An excellent model is provided by the Panamanian foundation for cooperative housing (FUNDAVICO) which is implementing a program of low cost housing in rural and semi-rural areas of Panama. The houses produced under this program range from U.S. $300 to U.S. $1,000 and are constructed using various cooperative self-help techniques. Other TSO's are now participating in a grant-funded project with the Inter-American Foundation, that is directed at low-income families migrating to urban areas.

Although there are slight variations in the organization and development of each project in this program, they all follow a general

pattern. The initial contact by a FUNDAVICO representative with leaders of the community is normally made on an informal basis. When more formal interest has been demonstrated, a FUNDAVICO representative will call a public meeting for all to attend. At this meeting, he explains the role and objectives of FUNDAVICO, describes the program and briefly details the requirements for participation in the project. At later meetings, savings programs are established and training sessions for the new members are conducted.

When the pre-cooperative members have studied and approved model by-laws, prepared by FUNDAVICO, they submit a formal request to the National Council of Cooperatives asking for recognition as a housing cooperative. The financing for the enterprise in Panama has already been secured by a loan from the Panamanian government housing institution (IVU) and the United States Agency for International Development.

The cooperative, with FUNDAVICO approval, contracts construction foremen from the community who supply skilled labor, supervise the construction of the houses and teach the cooperative members the basic elements involved in the construction. The cooperative members provide the basic labor for their own homes and other units being constructed simultaneously by their foreman.

FUNDAVICO assists the cooperative in the purchase of the construction materials and FUNDAVICO staff inspects the construction of the houses.

By using $352,000 from the AID loan funds and the 10% co-op contribution, FUNDAVICO has developed 18 housing cooperatives of

this type for a total of about 475 homes. Some of the cooperatives consist of only 20 homes, while others might have as many as 75. The average price per unit is an estimated $743, to be repaid over a ten year period at 6 percent interest. As repayment takes place for the first 475 homes, funds will be accumulated to continue the program and build additional homes.

FUNDAVICO's program reaches a large segment of the population, which previously had not been served under any other housing program. It provides the members of the housing cooperative with an opportunity to improve their homes and teaches them the importance of their own action and efforts, when they are organized and united with their neighbors through a permanent institution — the housing cooperative. By working within their cooperative and seeing it fulfill their objectives, the members will gain confidence and pride in both their cooperative and themselves, and, as a consequence, will be encouraged to undertake additional community development projects.

The FUNDAVICO model could be extended to other TSO's who wish to serve low-income families. In fact, their services could be extended to include many others - credit, employment, and health, - in a unified attack on the problems confronting the low-income occupant. To be successful and to reach really poor occupants, a TSO modeled on FUNDAVICO would have to receive more in the way of start-up and operating subsidy.

VI. THE NEED FOR INCREASED PRIVATE SECTOR INVOLVEMENT IN LOW-COST HOUSING

Efforts To Date

During the past ten years it has been the policy throughout Latin America to consider housing for low-income families as a public sector problem. Most private sector housing efforts have concentrated on upper-middle- and upper-income housing. IDB has provided most of the outside financial support to the Government housing institutions, while AID has supported both the Government and private sector efforts.

The major accomplishment of the public sector effort has been the creation of permanent national government housing institutions in each country whose annual production of housing for low-income families often varies in proportion to the exterior financial support available. During this 10 year period more than 250,000 housing units have been constructed and hundreds of Latin housing technicians have been trained. However, the volume of housing produced for low-income families is so low that it has had almost no effect on the arithmetic of the housing problem.

In the private sector, new cooperative housing institutions (TSO's) and new savings and loan associations have been established during this same period. The private sector efforts of the savings and loan associations have had the benefit of large investments of exterior and local money. The 10 year estimated total investment is about 62 million dollars. However, the relatively high average per unit cost of the upper middle-income projects

($7,000 to $15,000 per unit in most countries) gives a relatively low figure of about 20,000 in total units produced.

Cooperative housing in Latin America has also produced a relatively small volume of new units, with the possible exceptions of Chile and Brazil. One reason for this is the lack of money and the other is the lack of TSO's in many countries. Cooperative housing has generally served a level below the savings and loan system and above the government housing institutions ($3,000 to $7,000) although there are many exceptions. For example, FCH/AID assisted rural cooperatives in Panama are in the $300 to $1,000 range and other projects are in the $2,500 range. Total units produced on AID/FCH assisted projects exceed $3,500. In addition, the TSO members of INTERVICO have approximately 12,000 units completed or under development. Brazil has completed more than 100,000 cooperative units with local financing.

Throughout Latin America are various types of <u>private</u> non-profit housing organizations that are producing very low cost houses in the $500 to $1,500 range in small but well managed projects. These sponsoring organizations include cooperatives, TSO's, labor unions, church groups, and community development foundations. The volume produced by these efforts is also quite low when compared with the need. However, these groups have great potential for expanded programs if they have access to financing and professional technical help.

A summary of AID housing support in Latin America shows that 236 million dollars has been approved for the period 1961 through fiscal year 1972. In addition approximately 190 million dollars was made available during the same period through the AID housing Guarangy Program.

The Role of a TSO as a Complement to Government Housing Reports

Efforts by government housing agencies to provide a sufficient volume of housing for the marginal population have not been successful. The reason for this lack of success varies from country to country, but there is growing recognition that governments simply do not have the financial or technical resources needed to construct enough houses to accommodate the marginal population.

Searching for better ways of using existing resources some governments are now looking closely at the positive aspects of the unaided self-help construction already taking place in marginal areas. Many of the houses constructed by these families without outside help do meet the minimum standards set by their occupants. Even the worst shack of scrap lumber and tin represents an investment of money and labor by its owners and provides some shelter. The total number of new homes produced in this way far surpasses those produced by government housing programs.

In several countries, government-sponsored programs are now being developed that seek to capitalize on the initiative of these families. Priorities are shifting from the physically attractive "standard house" with relatively high standards, serving only a few, to programs that seek to encourage and control the self-help construction efforts of families living in marginal areas. There is also a growing interest in "site and service" programs to prevent new

uncontrolled settlements from developing. TSO's can work with government and other private groups in carrying out programs of this type. With more help from the private sector in housing construction, government efforts could be concentrated on acquiring land, overall planning and control, providing community services, assisting in providing credit, and encouraging job producing activities and family planning.

Actual construction can then be encouraged by private individuals or community organizations and housing cooperatives with the assistance of a TSO. Governments should concern themselves less with what kind of house is built and more with where the house will be built. There should be less concern with what is considered to be a minimum standard for a house and more concern with ways to encourage the steady improvement of existing shelter. A TSO can provide the necessary professional and technical help to cooperatives, community associations, labor and church groups in carrying out these self-help programs.

VII. SOURCES OF FINANCE FOR THE MINIMUM SHELTER APPROACH

International Financial Support

AID and IDB have provided considerable amounts of money for housing and urban development in Latin America. The World Bank is also developing new programs to support urban infrastructure (streets, water, sewer, etc.). This external financial support is producing results and continutation of this support will be needed in the future if the shelter problem is to be resolved. During the 1970's FCH strongly recommends that the international agencies increase their requirements for local self-help as preconditions for granting large loans.

Local Financial Support and Self Help

The long range answer to the shelter problem in any country lies in developing adequate local financing. There are certain self help measures which could be taken in most developing countries to reach this goal more quickly. For example, (1) new tax laws could limit land speculation, a major cause of higher house costs, (2) new laws could require local banks and industry to channel a fixed per cent of their resources to lower income housing, (substantial amounts now go to very high income housing in most Latin American countries) (3) new savings and credit systems could be developed for housing which by law would be limited to lower cost units. (4) management and administration of existing low-cost housing projects could be improved to reduce the high delinquency rates which are common in many countries. This would increase income to the government housing agencies and perhaps more important, would demonstrate that low-cost housing can be a sound investment for local money.

Subsidies

A major theme of this report is that private sector organizations, such as TSOs could greatly expand their efforts to produce improved shelter for low income families and that these efforts should compliment the Government efforts. It should be recognized that most housing programs which reach very low income families need some form of subsidy, direct or indirect, especially during the early development stage.

Hidden subsidies are involved in many of the current government and private programs for low income families. They occur in the administrative costs of sponsoring organizations which are sometimes not charged to the project, in land donations and in donations of professional services. FCH believes that some form of subsidy will always be necessary at the very low level. However, the object should be to reduce this subsidy to the minimum. In some countries it may be possible to develop balanced programs where the upper and upper middle income housing projects are "taxed" to carry the subsidy of the low income projects. In other countries it may be necessary to cover the difference from the national budget or by taxing some special consumer item. (One country in Latin America uses a beer tax!)

If the TSOs develop minimum shelter programs, the subsidy question will have to be answered on a case by case basis.

VIII. FINDINGS OF FIELD SURVEYS AND APPLICATION OF COOPERATIVE TECHNIQUES IN NEW PROGRAMS

General

Five brief field surveys were undertaken by FCH in preparation for this report. They were carried out in Guatemala, El Salvador, British Honduras, Peru and Bolivia. Additional information was gathered in Jamaica, Panama, Colombia and Honduras. Detailed information from the survey work is included in Volume II of this report.

As a result of the survey visits and discussions with AID, cooperative leaders and local housing officials, several potential projects were identified which would demonstrate the validity of using TSO's, cooperative techniques and the minimum shelter approach to produce housing for low-income families.

In almost every country surveyed, FCH found that it is possible to produce minimum housing or shelter for $1,500 per unit or less and that there is an effective demand for housing at this level. The type of solution varies from country to country depending on local materials and customs. The conclusion is that selected poor families who have some income which they can devote to housing, will repay a loan for a lot, utilities and building materials. They can either build their own house or a sponsoring institution can build a basic "core" or shell house which they can expand and complete in the future. Acceptance of the "minimum shelter" approach

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Following is a brief country by country summary of what could be done in these countries as well as several other countries where FCH has experience

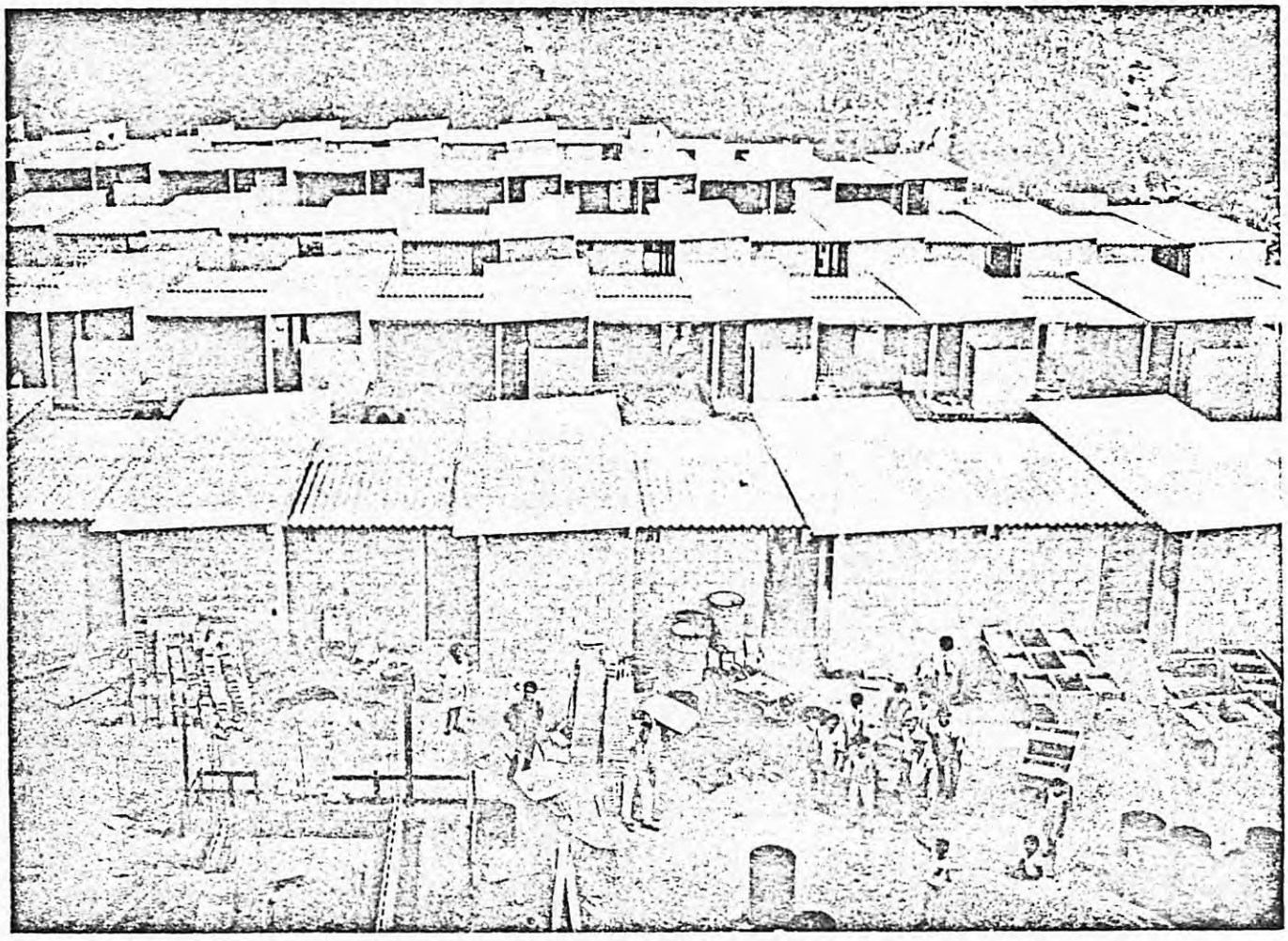
GUATEMALA

In early 1972 USAID/Guatemala requested FCH to assist the mission and INVI, the national housing agency, in preparing a preliminary study for a possible AID housing loan which would provide assistance in small communities outside of the capital. In carrying out this work FCH found that it is definitely feasible to construct housing in the $700 to $1,500 range in these small communities and also determine that there is an effective demand for this kind of house. The Government of Guatemala gives this type of program high priority. They would also like assistance from AID to provide housing for very low income families in Guatemala City.

FCH has previous experience in Guatemala. In 1968 FCH assisted USAID and INVI in developing a demonstration cooperative housing project in Esquintla. This project consisted of 180 homes in the $2,500 range. Local financing contributed to the project and long term financing came from the Central American Bank for Economic Integration. There is no technical service organization in Guatemala and INVI was also the sponsor of the Esquintla project. They are now extremely proud of the results and use this project as an example of good community participation, good overall appearance and maintenance and the best record of monthly collections. At the completion of the project, INVI offered to contribute financial support toward the establishment of a TSO in Guatemala to develop similar projects in other communities. They requested help from FCH and AID to carry out this idea. However, there was a change in governments and personnel within the housing institution and no action was taken.

FCH believes that there is current potential to move ahead in Guatemala with a new program to create a TSO to complement INVI's efforts at the very low-income level and develop projects using co-operative techniques. An AID loan of approximately 3 million dollars would be required as a catalytic agent in getting this program started.

EL SALVADOR



The Foundation for Development and Minimum Housing (La Fundacion de Desarrollo y Vivienda Minima) has developed two successful programs in El Salvador consisting of CORE houses in the $700 to $1,000 range.

EL SALVADOR

FCH found an outstanding example of a privately sponsored housing program for very low income families carried out by the Foundation for Minimum Housing (Fundación Salvadoreña de Desarrollo y Vivienda Minima). The Foundation is a private, non-profit organization which has received assistance from USAID/El Salvador, the Pan American Development Foundation (PADF)and the Inter American Foundation. FCH has also provided some help to the Foundation during short term visits and by correspondence.

The Foundation has developed two projects totaling approximately 200 houses ranging from $740 to $980 per unit. These projects are described in detail in Volume II. We believe the timing is right to assist the Foundation to expand its activities and suggest consideration of an AID development loan of about $2 million to create a revolving fund and to assist in this expansion. The loan might also help establish a co-operative savings and credit system for low-income housing. This would demonstrate confidence in the Foundation's approach and upon successful completion of the AID funded activity, the Foundation could expect larger sums of money for continuing and expanding the program from local sources and from the Central American Bank of Economic Integration (CABEI). The Foundation's programs could be improved during implementation of the proposed loan with technical assistance to help them function more as a TSO and to bring more community participation into their program.

BRITISH HONDURAS

AID requested a brief survey visit to Belize by FCH to evaluate their housing needs and existing programs because there is the possibility that British Honduras would be a sub-borrower under the proposed AID loan to the Caribbean Development Bank. FCH found that a small scale program for lower-income families is feasible and houses of less than $1,500 each could be produced and sold to low-income families. A sub-loan of about $1 million could be effectively used.

"The National Housing Survey", prepared by the Ministry of Education, Housing and Labor and published in August of 1970 revealed that, from an environmental and structural sense, 56% of the total housing stock of 5,400 in Belize City was of poor quality and an additional 35% was of questionable or marginal quality. Only 9% of the current housing stock was evaluated as acceptable. Other major towns in the country had housing stocks of either marginal or acceptable quality. The current housing need in Belize City is estimated at about 3,000 units.

The public and private organized building industry produces approximately 400 "standard" dwellings per year, mostly in Belize City. Since 1962, the government of British Honduras has provided loan funds and staff support for the construction of 220 houses by the Housing and Planning Department of the Ministry of Education Housing and Labor. All of the houses have been constructed in Belize City with the exception of eight units built in the town of Hattieville. About 30 units are built each year with the Department's construction crew of 22 workmen.

The Housing and Planning Department is constructing standard housing in the $1,500 unit cost range. The typical dwelling constructed by the Department consists of four rooms and 480 square feet ($45m^2$). Soil cement blocks produced on the site with the "CINVA-RAM" machine make up the walls. Floors are elevated and are of wood construction as are doors and window sash. The roof is corrugated galvanized steel. Basic cost for this dwelling is $1,510.00. Thirty-eight percent or $575 of this cost goes for labor and corresponds to a possible additional savings if the dwellings were partially constructed by self-help. Total unit cost is $\$27/m^2$.

Land costs for houses built on property sold by the Department of Lands appear to be very highly subsidized. For a lot of $382m^2$ the cost is only $\$.78/m^2$. Urbanization services included water and electricity. The large size of the lot is dictated by the absence of sewer service and necessity of the installation of septic tanks.

PERU

AID has recently approved a very large scale housing and urban development program in Peru. It includes a $3 million community development loan, a $28 million Housing Guaranty activity, and a $15 million housing loan program. All three activities are to be carried out in the earthquake reconstruction areas.

During 1971, USAID/Peru requested a series of short term technical assistance visits by FCH to assist in developing these loan programs and to help the GOP develop loan implementation plans. FCH recently signed a new task order with USAID/Peru under which it is providing a resident technician to continue this assistance during the coming year.

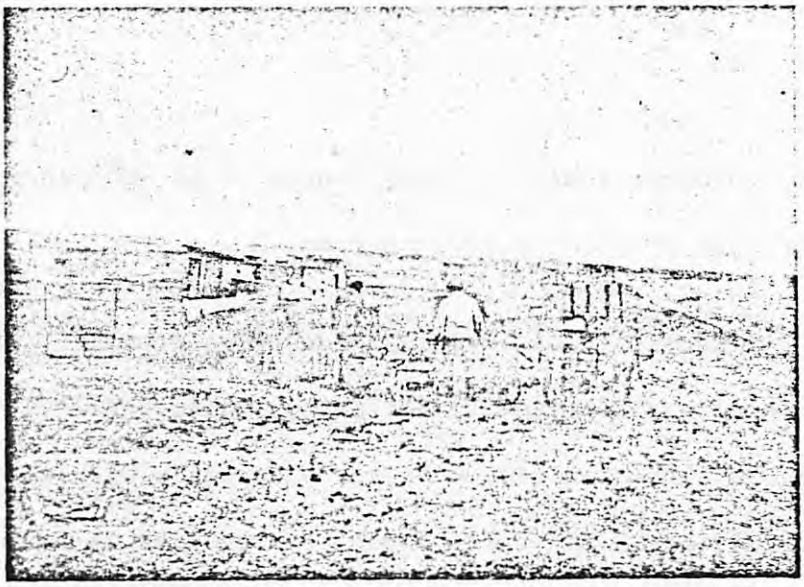
The reports prepared by FCH in 1971 on these programs recommended a comprehensive approach to the problem and specifically recommended the development of a demonstration project for very low-income families in Chimbote under the $3 million loan. The demonstration project will include a variety of activities in addition to self-help housing, including provision of water, sewer, small industry, and building material production. Cooperative techniques will be an important aspect of this project and would include many of the elements of the earlier (1966) AID/FCH/IVU minimum shelter project in Panama.

The February 1972 FCH report to AID on the $15 million loan program recommended minimum shelter programs ranging from home improvement loans

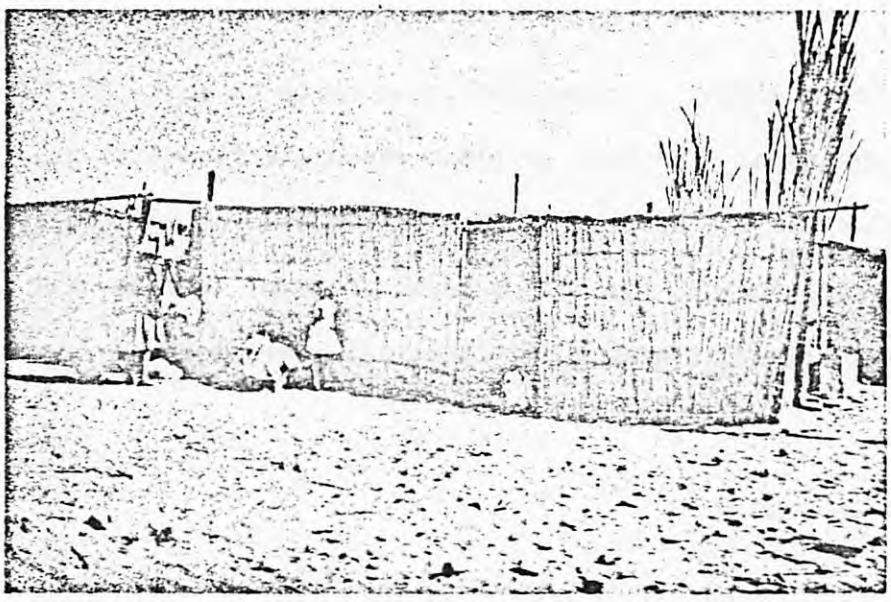
at $350 per family to core houses at $1,500 per family. Implementation of this program is now underway.

Recently, USAID/Peru requested additional help from FCH to evaluate the potential for establishing a TSO which would concentrate on developing minimum shelter programs using cooperative self-help techniques. FCH carried out this evaluation during the survey period. Follow-up work on this idea will take place during September 1972.

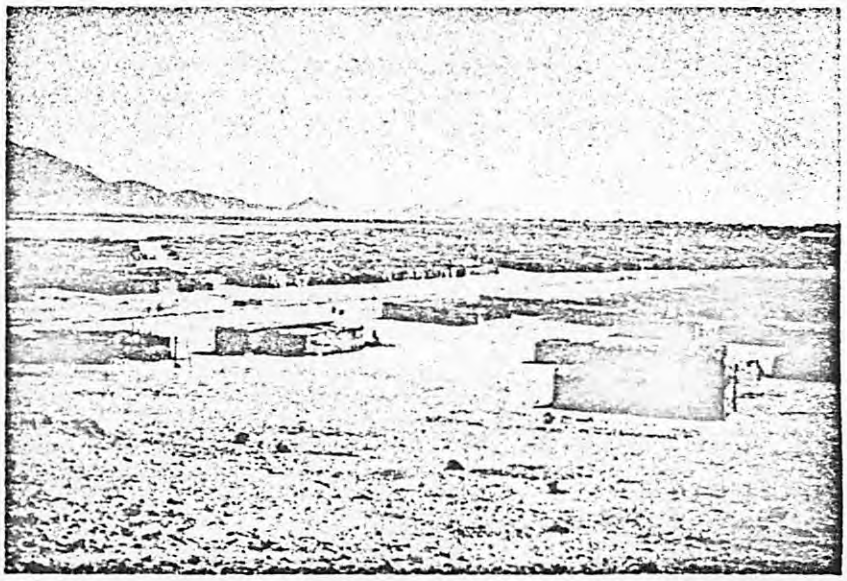
In summary, Peru offers a tremendous opportunity to test the minimum shelter approach. The need is there and ample financial resources are available. The problem is the limited absorptive capacity of the Peruvian organizations for such a large program. Perhaps this can be helped by increased training and technical assistance.



This family has just arrived to build their home on the outskirts of Lima with materials carried on a bicycle pushcart.



Straw house in "New To[illegible] in Chimbote - 1971.



Chimbote "New Town" 2 years after the earthquake.

BOLIVIA

USAID/Bolivia requested a survey visit by FCH during May 1972 to evaluate the current housing situation and to assist in developing a proposed housing loan program for low-income families in 1972. Previously FCH had worked in Bolivia during 1965, when it assisted the GOB in developing new legislation dealing with housing cooperatives and in developing model documents and manuals for housing cooperatives.

The housing situation is critical in Bolivia and seems to be deteriorating. The public sector is organized to concentrate on alleviating the situation of low-income groups. Its financing is limited and during the last few years it largely depended upon foreign loans provided mainly by the Inter American Development Bank. This source of finance has been rechanneled in recent years away from housing toward larger urban utility investments.

The private sector is mainly formed by the savings and loan system and a small group of private developers. It has concentrated on financing the production and mortgage loans for middle- and middle-high-income groups, although smaller associations have been willing to experiment with lower cost core housing.

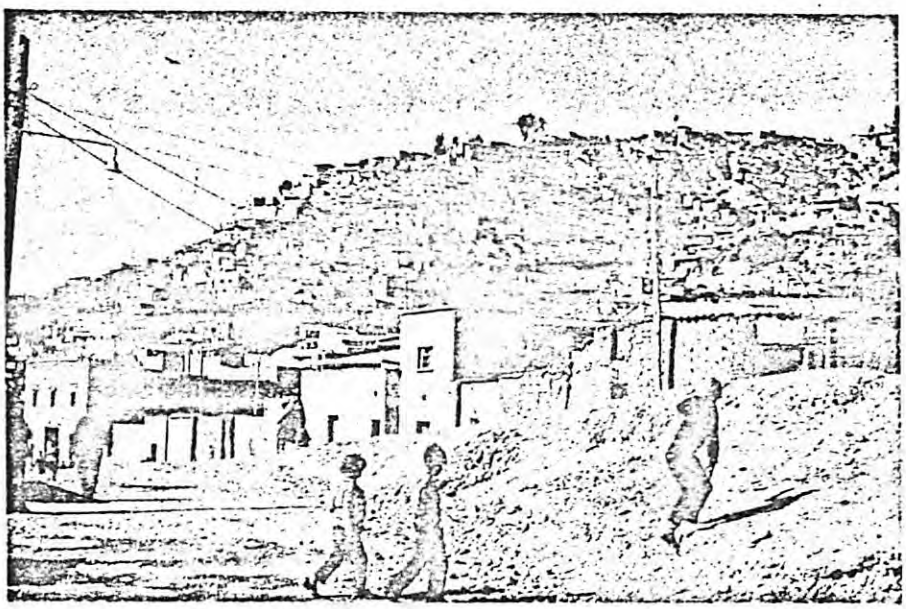
Cooperative housing has now become established in Bolivia, although on a very small scale. Cooperatives, however, have specifically attempted to resolve the housing problem of low-income families who can afford to pay no more than $1,500. Housing cooperatives have come far with only

minimum attention of organized technical assistance — even to the degree of establishing a form of global mortgage (la "Merced"). This spontaneous initiative appears to be at a stage of development where it may be profitably expanded.

Two private organizations, the Association of Popular Housing (VIPO) and the "Merced" Credit Union have developed housing costing under $1,500. Both are rural housing programs in which water, sewer and electricity are not provided initially. VIPO and "Merced" have produced minimum urban housing programs at slightly higher cost:$1,760 and $2,160. Sewage disposal is generally by septic tank and the urban programs include water and electricity.

The Guapay Savings and Loan Association has built core housing costing $2,500 to $3,500 on fully urbanized lots. They are designed to serve moderate income families and to be expanded as the family grows. Though the average loan from the Association is $4,450, this is a welcome expression of the willingness of savings and loan associations to serve lower income borrowers.

Two AID loans are under consideration in Bolivia: one to support the savings and loan system and one to develop a minimum shelter (site and services)program. FCH recommends approval of both programs and suggests that limitations be placed on the housing sales prices of both programs to insure that they reach low-income families. Housing cooperatives could be "sub-borrowers" under each loan and VIPO and the Merced Credit Union could provide TSO services.



Uncontrolled settlement in La Paz, Bolivia, 1972



The Cooperative La Merced constructed these houses in Santa Cruz, Bolivia.



VIPO, a Bolivian TSO recently completed these houses in Cochabamba.

HONDURAS, PANAMA, COLOMBIA AND JAMAICA

Although Honduras, Panama, Colombia and Jamaica were not included in the survey work, FCH has considerable experience in these countries. FCH assisted AID and local governments to develop TSO's and cooperative housing programs in each country. Currently FCH is discussing new programs with these TSO's,which would direct more of their efforts to a lower level and utilize the minimum shelter approach.

Honduras

In 1971 USAID/Honduras requested FCH help in developing a preliminary proposal for a new housing loan that would be directed at very low-income families. Implementation of the loan would be by private sector, non-profit organizations who have already demonstrated their ability to produce housing on a small scale. The objective of the loan would be to create a revolving fund to help these private organizations increase their capacity to produce housing as a compliment to the efforts of the government housing institution (INVU). Upon completion of the proposed loan funded program, it would be hoped that local funding would be available to continue the program and that CABEI would also contribute to a long range program of this type.

The four organizations that would carry out this program are:

(a) the cooperative housing TSO (FEHCOVIL);

(b) the Community Development Foundation;

(c) the Credit Union Federation (FACASH); and

(d) the labor union bank (Workers Bank).

All four are private organizations with demonstrated interest and success in serving the housing needs of low income families. The range for housing produced under this proposed project would be $500 to $2,500.

The proposed program has many of the elements of a new minimum shelter approach that should be tried in Honduras. FCH recommends that AID reconsider funding for this proposal with a loan of 2 million dollars.

Panama

AID is considering a new loan to the Government of Panama in the amount of 15 million dollars that will be used by the Panamanian housing institution IVU to

(a) continue and expand the type of minimum housing program used under the 1966 AID loan ($500 to $1,500 level);

(b) assist FUNDAVICO (Panamanian technical service organization) to carry out an expanded rural cooperative housing program costing under $1,000 per unit; and

(c) to allow IVU to construct middle-income urban housing projects in the $5,000 to $7,000 range with Government of Panama counterpart funds.

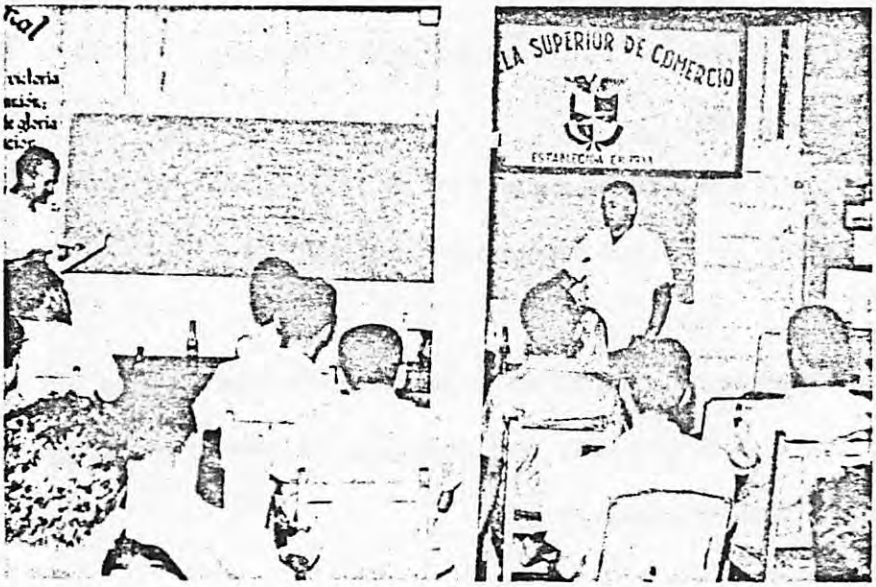
FCH has been working in Panama on a continuing basis since 1966 with USAID, IDB, IVU and FUNDAVICO, and recently signed an extension of the task order with USAID/Panama.

FCH is hopeful that further demonstrations of the use of cooperative techniques to serve low-income families can be made in the new

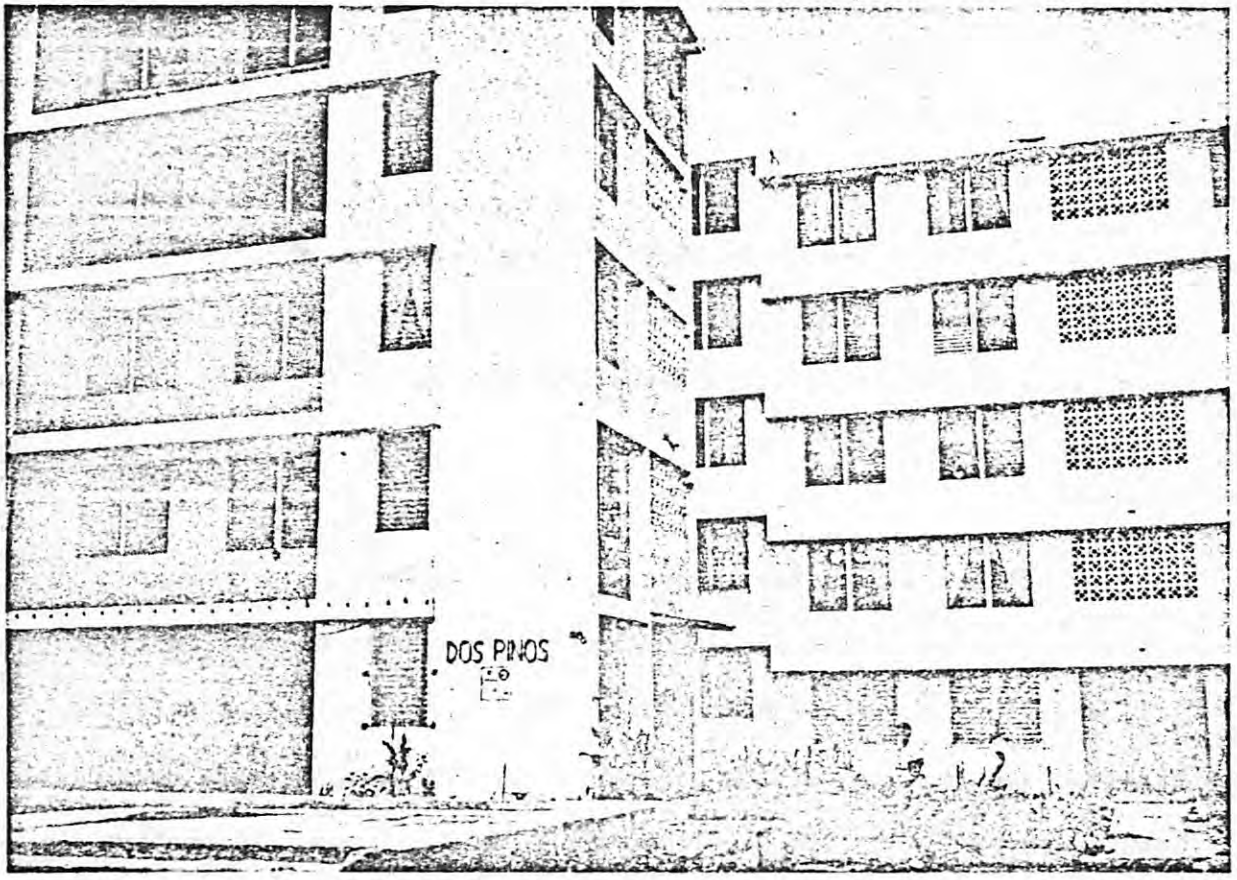
FUNDAVICO - PANAMA



Rural houses by FUNDAVICO are constructed in small communities for less than $1,000 per unit.



FUNDAVICO conducts continuous training programs for cooperative leaders.



Maintenance is outstanding in this cooperative in Panama City.



The cooperative sponsored a flower planting activity for children living in the project.

program. There is also good potential to help FUNDAVICO develop a cooperative savings and loan association that would serve a lower level than the existing savings and loan system.

Colombia

FCH has worked for several years in Colombia under AID task orders providing assistance to USAID, the Colombian housing institution, ICT, and local housing cooperatives. They have also assisted in the creation and training of the Colombian TSO, PROVICOOP. With counterpart loan funds,PROVICOOP has developed three middle-income cooperative housing projects. In addition, it has developed nine middle-income projects financed by the Central Mortgage Bank.

PROVICOOP has a strong interest in developing innovative experimental type programs for low-income families but lacks funds. It is a vigorous participant in the INTERVICO study program of the Inter American Foundation.

The relationship between PROVICOOP and ICT has been good and they have cooperated on several projects. ICT has one of the largest and best housing programs of any government institution in Latin America. Recently it has redirected its program to serve low-income families exclusively and will discontinue its middle-income efforts. FCH is very much in favor of this new direction by ICT and hopes it will encourage similar action in other countries.

In 1971 FCH assisted ICT in developing policies and work plans for these very low-income programs including site and services schemes and core housing. ICT policy level technical personnel have also participated in AID/FCH workshops on the problem of providing for the marginal population.

In 1971 AID made a 20 million dollar urban development loan to the Government of Colombia, part of which went to ICT for housing. A second AID loan is now under consideration that would provide additional funds for similar purposes. FCH recommends that some of this money be used to test innovative approaches to increase community level involvement in developing these projects. FCH feels that PROVICOOP could make a valuable contribution in implementing such a project by the application of cooperative techniques.

Jamaica

FCH has assisted AID and the Government of Jamaica in several housing activities during the past few years. It assisted in the establishment of a private TSO, Mutual Housing Services (MHS) and assisted in developing the recently approved AID loan for the creation of the Jamaican Mortgage Bank (JMB). This loan also includes funds for sub-lending to develop cooperative housing projects. During a survey visit in 1971, FCH assisted MHS in evaluating potential rural projects and estimated that very minimum housing could be built for less than $2,000 in rural areas. There is, however, a feeling in Jamaica that it is not possible to produce an "acceptable" house for less than $5,000. Current projects of MHS are in the $7,000 to $8,000 range.

The JMB will provide support for "middle-income" housing in the $7,000 and above range. The new Minister of Housing has indicated a strong desire to change the priority for government-assisted housing from the middle level to the lower level. They are discussing interesting ideas to accomplish this including:

(a) tax reforms that would increase taxes on upper-income construction to produce revenue for low-income housing;

(b) creation of a land bank to curtail and control speculation, which is causing extremely high land costs in urban areas and the prevention of development of well located housing for poor families; and

(c) creation of a Housing Finance Authority that would control and regulate all Jamaican housing financial institutions (including the JMB and savings and loan associations) to insure that less money goes to upper- and middle-income housing and more money goes to lower-income housing.

It is encouraging to see this type of local initiative and FCH recommends that AID continue providing support for these efforts.

During early 1972, FCH provided assistance to MHS in preparing their proposal to the Inter American Foundation. This recently resulted in approval of a grant of $450,000, to use as operating capital in developing projects for low-income families. It is also an encouraging indication of the concern that this TSO has for low-income families.

INTERVICO



The second annual meeting of INTERVICO, the Inter American Cooperative Housing Organization, was held in Panama City during June 1972.

IX. REGIONAL MULTI-NATIONAL APPROACH TO COOPERATIVE HOUSING

There is a need to complement national cooperative housing programs with regional back-up services. In July 1971, technical service organizations developed with AID and FCH assistance in Latin America met in Bogota, Colombia, to form INTERVICO, the Inter-American Cooperative Housing Association. The purpose of INTERVICO is to provide a vehicle to exchange technical information and experience among the TSO's and to provide a permanent multi-national source of technical expertise in the cooperative housing field. Each member contributed $1,000 to form the initial capital and they have since received additional financial resources from national and international organizations.

The eight present members of INTERVICO are: PROVICOOP, Colombia; FUNDAVICO, Panama; INVICA, Venezuela; INVICOOP, Chile; FCH INTERNATIONAL, U.S.A.; TECNICOOP, Chile; FEHCOVIL, Honduras, and Mutual Housing Services, Jamaica.

The member institutions of INTERVICO have more than 15,000 housing units completed or under development in Latin America. They have stable, competent, professional staffs with many years experience in the low cost housing field. Although much of their past effort has been at the middle-income level, they are interested in making a contribution at the lower level. One obstacle is a feeling in some countries that government housing institutions do not want competition at the lower level, even though they cannot meet the need. In other countries, more

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1970's. The answer to this need should be a collaborative approach, combining the experiences and expertise of FCH with the professionals of INTERVICO.

However, it is important to note that technical assistance alone does not produce significant results in the field of housing. The AID approach of combining technical assistance with loans or grants for actual projects has proved much more effective than the programs of some international organizations that provide only technical assistance and advice without funds for actual projects.

During the past year AID has issued policy statements in support of innovative new approaches to development problems. AID has also indicated support for multi-national programs as a complement to bilateral programs. FCH believes that INTERVICO has great potential to assist in the production of housing for low-income families using the minimum shelter approach and cooperative techniques, but it will need help.

In January 1971, the INTERVICO Board of Directors visited Washington and New York to describe their programs and explain their objectives to international agencies dealing with the housing problem in Latin America. They suggested to AID that a development loan to INTERVICO could be used as a regional fund for promoting and developing innovative new projects for low-income families. INTERVICO would make sub-loans to its member TSO's and other private sector non-profit organizations for low-income housing activities. FCH recognizes that

this would be departing from the traditional AID lending pattern, but feels the idea has considerable merit and deserves serious consideration.

INTERVICO is prepared to submit an application to AID for a $5 million development loan,if they receive indications of AID support for this concept.

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COOPERATIVE HOUSING AND THE MINIMUM SHELTER APPROACH IN LATIN AMERICA

I. PURPOSES AND PROCEDURE OF THE COUNTRY ANALYSIS

The Latin American Bureau of the U. S. Agency for International Development requested that FCH carry out an analysis of the means of directing AID-supported housing programs, particularly cooperative housing, to assist the lowest income group in Latin America for which home ownership was feasible. Field studies were begun in March of 1972 and continued to September for the purpose of collecting current and detailed data in five countries. Volume 1 of this report presents the general finding of the field studies together with seven recommendations for the conduct of AID's housing assistance program in Latin America. Volume II contains the detailed and technical presentation of these findings.

Countries for FCH analysis were selected by request of the local AID Mission (or U.S. Consulate in the case of British Honduras). FCH personnel worked closely with U. S. officials in each country. Interviews were conducted with local housing officials, officials of related local government agencies, builders, bankers and architects. Cooperative organizations and private philanthropic groups were contacted as were other international assistance missions, such as the Inter-American Development Bank. Draft copies of the field reports were prepared for the Latin American Bureau and the participating mission personnel.

One principal objective of the field study program was the identification of successful, private, self-help and cooperative housing programs to construct minimum shelter. Examples of improved government efforts to assist lowest income groups were also identified. Private, self-help programs of this nature were found in nearly every country, with the most promising ones in Guatemala, El Salvador, and Bolivia. This led FCH to recommend a new approach to harness the self-help efforts of those in need of housing.

The proposal for a new model policy of minimum shelter is based on the observation that opportunities for home ownership and security have typically been far too costly for well over half of the urban population of Latin America. A second objective of the field study program was to document this fact with national population, income and production data. Potential programs were identified for the development of minimum shelter housing and specific recommendations for technical and financial assistance were made for each country in the survey.

A. Need and Demand for Minimum Shelter

The rapid urbanization which is recorded in this report in four of five survey countries is nearly completely out of control. In a typical capital city, where 30% to 40% of the urban population and 15% to 20% of all the people usually live, growth is nearly twice as rapid as the rate of growth for the country as a whole. The new population is taking over the city, moving from densely crowded tenements to squatter settlements in the normally unbuildable land along rivers and slopes of steep hills.

Twenty percent of San Salvador, for example, is occupied in this manner and illegally unserviced settlements grow at a rate of 16% per year versus 3% per year recored as the growth of legally organized developments. The proportion of unplanned settlements in Lima is over fifty percent.

A second observation to be noted from the field studies is that from 20% to 50% of the urban population in these five countries have incomes within the limits of $250 to $750 per year. Sixty percent of the families in squatter communities in Guatemala, and presumably in many other countries, are in this income group. For purposes of planning, this is the income group identified by FCH as having a capability of repaying a loan for minimum shelter.

If a more conservative estimate is desired for a population sector with earnings of say $400 to $700 per year, the market in a country with typically 1 1/2 million urban residents is 20,000 to 30,000 families. The growth of this income group equals a need for 1,200 to 2,500 new urban units per year. Among the rural population of a country with 2 1/2 to 3 1/2 million people, the annual demand for housing costing less than $1,500 is between 7,000 and 10,000 units. Obviously the need and potential demand for minimum shelter is very strong.

The private house building industry appears to be very under-developed in the surveyed countries. Annual construction in nations of three and five million people is only 500 to 2,000 units - all of these costing $5,000 and more. The biggest boost to private construction has come as a result of USAID encouragement of savings and loan institutions. After six years of operation in El Salvador, "S and L's" now finance nearly as many new houses as do banks, insurance companies and other traditional lending

TABLE 1A

SUPPORT OF THE INTER-AMERICAN DEVELOPMENT BANK FOR HOUSING

Country	Loan value	Average House Price	Number of Dwellings Built	TOTAL Investment to 1970
Argentina	$(11,000,000 est.)	$8,660	3,024	$---
	$30,000,000	$4,934	15,200	$(41,000,000 est.)
Bolivia	$3,950,000	$1.923	3,394	
	$4,000,000	$2,341	3,934	$7,950,000
Brazil	$3,850,000	$1,443	4,850	
	$(20,000,000 est.)	$1,818	26,389	$(23,850,000 est.)
Colombia	$15,200,000	$2,271	13,993	
	$7,500,000	$2,074	8,534	
	$2,500,000	$3,288	7,603	$25,200,000
Chile	$4,000,000	$3,360	4,051	
	$2,000,000	$2,497	3,087	
	$1,268,000	$2,297	1,084	
	$10,000,000	$2,240	10,714	$17,268,000
Costa Rica	$3,500,000	$2,934	2,950	
	$3,600,000	$2,339	2,816	$7,100,000
Dominican Republic	$3,500,000	$1,282	3,805	
	$1,735,000	$1,282	960	$5,235,000
Ecuador	$10,600,000	$2,728	6,500	$10,600,000
El Salvador	$6,100,000	$2,221	5,060	
	$6,000,000	$2,562	5,850	$12,100,000
Guatemala	$5,300,000	$2,041	5,260	$5,300,000
Honduras	$1,000,000	$2,000	736	$1,000,000
Mexico	$10,000,000	$2,600	23,000	$10,000,000
Nicaragua	$5,200,000	$---	2,958	
	$5,250,000	$2,650	3,774	$10,450,000
Panama	$7,600,000	$3,481	3,000	
	$(8,000,000 est.)	$3,684	4,533	$(15,000,000 est.)
Paraguay	$3,400,000	$2,316	2,600	$3,400,000
Peru	$22,800,000	$1,033	47,124	
	$1,000,000	$4,000	420	
	$1,200,000	$4,352	4,650	$25,000,000
Uruguay	$8,000,000	$6,000	4,100	$8,000,000
Venezuela	$12,000,000	$1,500	35,500	
	$10,000,000	$2,666	5,600	
	$10,000,000	$1,740	18,000	$32,000,000
TOTAL		$2,292	295,053	$270,103,000

TABLE 1B

SUPPORT OF THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT FOR HOUSING.

Country	By Grant	By Congressional Loan	By Investment Guaranty	Average House Price	Number of Dwellings Built	Total Investment to 1971
Argentina	$ 498,000					
		$2,000,000		$2,460	814	
			$27,721,394	7,334	2,820	
						$28,219,394
Bolivia		700,000		7,500	-	
		1,780,000	-	5,500	400	
		1,000,000	-	-	-	
		500,000	-	-	-	
			2,150,000	7,500	149	
						5,350,000
Brazil	5,000,000			-	-	
				-	-	
						5,000,000
Chile	5,000,000				-	
		5,000,000		4.300	1,160	
		8,700,000		-	-	
			4,690,000	6,267	929	
						23,390,000
Colombia	2,000,000			5,000	952	
	480,000			1,010	475	
		12,000,000		960	12,472	
		7,500,000		4,485	1,675	
			26,866,084	8,071	4,102	
						48,846,084
Costa Rica	2,000,000			1,250	2,023	
	1,000,000			-	-	
			1,541,729	3,860	371	
						4,541,729
Dominican Republic	2,000,000					
		2,100,000		6,000	350	
		5,000,000		-	-	
			7,161,726	8,623	867	
						16,261,726
Ecuador	225,000			2,250	195	
		5,000,000		3,600	3,000	
			1,859,766	5,600	264	
						6,084,766
El Salvador		3,100,000		5,000	700	
		3,000,000		-	-	
			9,531,681	8,867	932	
						15,631,681
Guatemala	3,800,000					
			6,853,675	6,339	1,236	
						10,653,675
Guyana			1,398,245	5,142	413	
						1,398,245
Honduras		400,000		2,500	160	
		2,000,000		-	-	
			4,566,528	5,374	1,095	
						6,966,528

Country	By Grant	By Congressional Loan	By Investment Guaranty	Average House Price	Number of Dwellings Built	Total Investment to 1971
Jamaica	295,000			1,280	230	
		2,800,000		4,630	605	
		10,000,000		9,978	1,780	
			10,203,008	7,025	1,194	
						20,498,008
Mexico		20,000,000		2,600	7,700	
			10,760,032	5,537	3,057	
						30,760,032
Nicaragua	450,000					
		3,700,000		2,230	1,443	
			9,174,914	6,603	1,120	
						13,324,914
Panama	250,000			2,547	275	
	90,000			1,465	2,500	
		2,100,000		-	-	
		3,000,000		-	-	
		2,500,000		5,000	695	
		3,500,000		3,650	959	
		15,000,000		2,500	15,433	
			5,549,894	7,122	553	
						30,094,894
Peru	500,000					
	143,000			-	72	
	970,000			-	419	
		7,500,000		4,200	1,785	
		3,000,000		5,000	200	
		6,000,000		6,000	1,000	
			21,623,876	5,700	3,395	
						37,736,876
Uruguay	4,200,000					
		6,000,000		8,500	706	
						10,200,000
Venezuela		5,000,000		3,600	2,810	
		10,000,000		10,000	5,256	
		30,000,000		4,000	10,839	
			36,749,361	9,734	3,011	
						81,799,361
Caribbean Development Bank		10,000,000		4,545	3,300	10,000,000
Central American Bank for Economic Integration		10,000		6,000	1,655	
			3,700,000	5,750	39	
						13,700,000
TOTAL	$26,901,000	$211,100,000	$190,061,913	$4,309	111,095	$437,062,913

sources. As the middle income market becomes saturated, builders now accustomed to higher production are beginning to investigate lower income markets. Cooperatives and private philanthropic organizations are producing housing costing $1,500 and less, but in numbers which are insignificant in terms of the need.

Construction by the various government housing agencies in each country has been the principal source of new housing. The United States has been one of the inspirations and a major source of funds in the growth of thses agencies through USAID programs and our contributions to the Inter-American Development Bank. Table IA and B are a summary of AID and IDB investments in housing in Latin America. Although the information is incomplete, we may safely conclude that over one-half million dwellings have been built with assistance of American dollars.

From table 1 and from the country field studies, it is evident, however, that U.S. assistance has not been focused on the problems of minimum shelter. The average value of housing constructed with IDB funds is $2,292. This is also the average unit cost of all housing produced by the various government housing agencies analyzed by FCH and reflects the overwhelming importance of IDB to those governments in recent years. The average value of housing constructed under USAID programs is $4,300. FCH has recommended that AID redress this record by concentrating upon the housing needs of low-income people and discourage for the purposes of loans, grants and technical assistance programs which do not attempt to meet their needs.

Although promising initial efforts of minimum shelter housing were identified in Guatemala, British Honduras and Peru, it is the private sector of cooperatives, mutual savings societies and philanthropic organizations which appear to have the most experience and continuous dedication to this type of housing in each of the field surveys. For this reason, FCH has recommeded that special consideration be given to the private sector in proposals for loans and grants to further develop its efforts in low-cost housing and minimum shelter.

B. Construction Costs and Development Standards

Designers of minimum shelter programs have at their command a very versatile selection of alternative solutions to enable them to adhere to cost and basic sanitary requirements. The diagrams and photographs at the beginning of Volume One show some of these. Within these basic alternatives, given specific site and social conditions, many fine adjustments may be made to provide for the healthy potential growth and livability of the Minimum Shelter Program. To illustrate the scope and benefits of variable approaches to the design of minimum shelter, additional information from FCH research carried out previously in Jamaica and Ecuador is added here to the information compiled especially for this report.

Table 2 is a summary of the results of FCH research into the component costs of minimum shelter solutions ranging in cost from $300 to $2,000. The table display six distinct alternatives for the variation of construction costs in fourteen separate projects.

1. Variation in the number of units per project

New developments of land and housing have large initial costs which do not change directly with the reduction or increase in the size of dwellings or number of buyers in the project. A large project can assign a smaller charge for these costs to each buyer than can a small project with fewer buyers. Also the savings can be used by the large project developer to purchase more construction for the buyer's house or a higher quality of community utilities.

From our studies in Jamaica (items 5 and 6, Table 2), FCH has found that an addition of 63 dwellings to a 113 dwelling project makes possible the addition of $5.00 in improvements to the house and $21.00 to site utilities of each house. This is without change to the $1,700 per unit house price.

2. Topographic and soil conditions

The most difficult building conditions exist in excessively hilly and perfectly flat terrain. Of the two extremes, mountainous land is easier for the construction of minimum shelter since the rock needed to support level platforms and floors is often on the site for the taking. Very flat land frequently has an absorbing clay soil deep below the surface which breaks up foundations, floors and walls. The land must be artificially contoured to avoid flooding and standing pools of water.

A moderately sloped, well drained site is clearly the most desirable as shown in the FCH study for Ecuador (items 7-10 and 11-14, Table 2 Minimum shelter is 20% more expensive in flat marshy land due to the need for reinforced foundations. Urbanization costs are 30% cheaper on a well drained site as a result of using a natural drainage pattern and avoiding raising the site with fill or digging canals and ditches as needed on the flat site.

3. Size of enclosed shelter

Designers of low-cost housing have often consciously insisted upon building dwellings much larger than the hovels that squatters built for themselves or the tenement rooms in which the poor were currently living.

The idea, frequently backed by building codes, is to force an improvement in living conditions. Unfortunately former squatters or tenants, if they have an opportunity to enter the new living conditions, may soon find they are unable to afford the rent required by the financing agency.

The minimal shelter approach is based on the idea that poor families, finding a desirable and secure living climate within their ability to pay, will quickly expand their initial minimum shelter to suit their needs. In El Salvador, (items 2 and 3, Table 2) there was no difficulty in finding buyers for core houses reduced from 30.5m^2 in area to 25m^2 when it became evident that the market required cheaper housing and material costs were rising. (Occupants of the original, larger core houses who were used to living in crowded conditions found it convenient to devote one third or more of their dwellings to commercial uses). A reduction of 5.5 square meters, together with other modifications, meant a savings of $180.00 per dwelling.

4. Size of lot

For the same reasons that standards of minimum enclosed shelter have been consciously made more generous than existing conditions, conventional designers have insisted that lot areas be larger than strictly necessary. Since minimum lots can obviously not be expanded and will be increasingly consumed as more space is added to the house, the basic space standard can be estimated only by practice and the needs for light and air for what will eventually become a two-story dwelling neighborhood.

The same basic three-walled core house of 25m^2 has been built in Guatemala and El Salvador (Items 1 and 3, Table 2). Land costs and urbanization costs were also comparable. In the Guatemala project of INVI, the land cost was

$1.95m^2$ and the urbanization cost $1.26m^2$. Costs of the FDVM project in El Salvador were $.92m^2$ for land and $1.36m^2$ for urbanization. These projects have identical pedestrian path access schemes, running water and sewage systems.

Because of a lot reduction of $28.5m^2$, a savings of about 25% was achieved in the cost of urbanization. If an identical raw land cost of $1.50 is used, the savings resulting from a reduction of lot area is over one-third.

5. Complexity and materials of the shelter solution

Past FCH projects in Panama, field studies carried out for this report and other research throughout Latin America have demonstrated the great variety of approaches which are applicable to the design of a minimum shelter program. In Ecuador, FCH studied costs for several minimum shelter solutions ranging from a surveyed, graded lot with unpaved access and a community water tap to an enclosed core house with sewer, on-site running water and paved roads. (See items 11, 12, 13, and 14, Table 2). The least expensive solution was about 20% of the cost of the most expensive solution. Note also that the $250 difference in cost between the unenclosed "roof-floor scheme" and the walled, core house represents the cost of the wall material (and one inexpensive door and two windows). This is one-third the cost of the core house.

Some savings in wall costs can be made by the substitution of soil-cement block for brick, tile or cement block. It may be from 30% to 70% cheaper. Another cost saving technique illustrated in the Guatemala country analysis is to erect three walls of a semi-attached duplex shelter and refrain from building the fourth wall. The same idea is illustrated in the El Salvador country analysis where only two walls of each unit are erected in a row-house design scheme. Savings in each instance may be estimated to be about $50.00.

Designers should be aware of the relative savings in building costs that vary from country to country in Latin America. The range of costs presented in the current studies is from $\$10m^2$ to $\$28m^2$. Figure 1, compiled from information published by the Inter-American Development Bank, shows that these costs can soar to as high as $62 per square meter of floor area.

6. Organization and other fees

One of the most widely fluctuating cost items in Table 2 is "Overhead and Other Fees" which are determined by the nature of the project sponsor. Minimum Shelter Projects developed in El Salvador at rates of 4% and 9% represent only the most directly accountable charges to the project. Much of the construction materials, salaries, rent and other costs are charitable donations to the private sponsor agency and are not passed on to the house buyer.

The government housing agency "INVI" of Guatemala absorbed some of the overhead and professional service costs of the minimum shelter project which has reduced the chargeable rate to 12.4%. Interestingly, the government estimated that to build a similar minimum shelter project outside of the capital city region, organization and other fees may increase from 12.4% to as much as 41%.

Ecuador's government housing bank which is the intended sponsor for the FCH "minimum shelter" study is not intended to function with planned subsidies. Neither is Mutual Housing Services Ltd., the cooperative housing technical service organization in Jamaica. Service fees of 22% to 33% may be regarded as a fair standard for the construction of minimum shelter projects by non-profit, non-subsidized organizations which must cover promotional operation costs from proceeds of current business. This rate is also in line with the estimate of 31.7% by private contractors in British Honduras and 35% to 38% profit and overhead quoted by contractors in Guatemala for projects outside

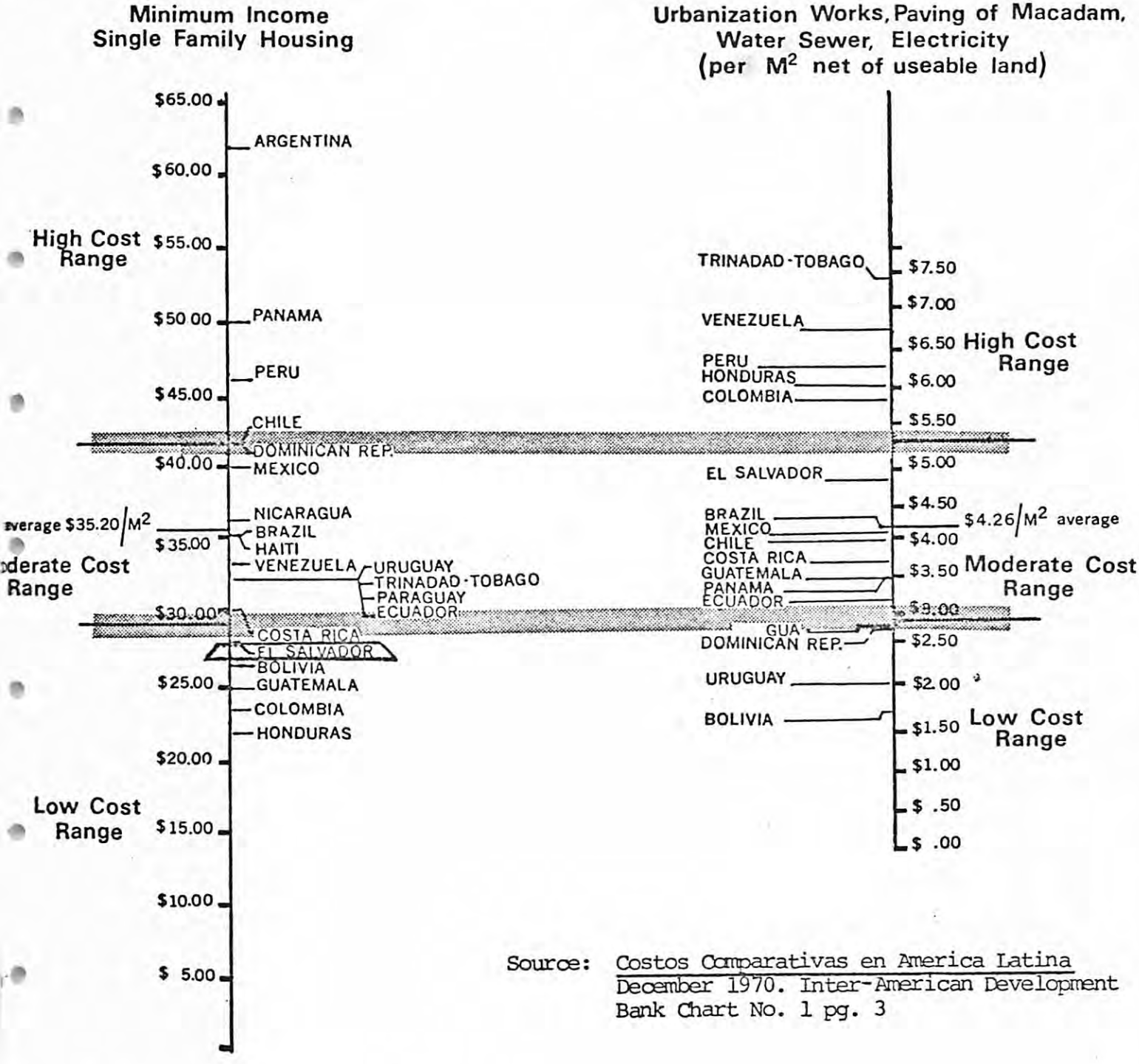
REPRESENTATIVE LOW INCOME HOUSING COSTS
IN LATIN AMERICA AND THE CARIBBEAN

TABLE 2

Minimum shelter projects in Latin America	Organization and other fees	%	Construction costs	$/M²	%	Land Cost	%	Urbanization costs	$/M²	%	TOTAL UNIT COST
1. Guatemala Core House 25 M² Lot 94.5 M²	$137.70	12.4	$658.81	$26.40	60.0	$183.49	16.7	$120.00	$1.26	10.9	$1,100.00
2. El Salvador Core House 30.5 M² Lot 67.2 M²	40.00	4.1	700.00	23.00	71.5	88.23	7	151.77	2.25	15.4	980.00
3. El Salvador Core House 25 M² Lot 66 M²	70.00	9.4	520.00	20.80	70.3	60.00	8.1	90.00	1.36	12.2	740.00
4. British Honduras House 45 M² Lot 372 M²	$1510.00				84.0	$290.00			.78	16.0	1,800.00
FCH site studies for proposed AID low-cost housing assistance											
5. Jamaica (176 units) Core House 34 M² Lot 465 M²	368.00	21.6	920.00	27.00	54.0	99.00	5.8	315.00	.78	18.6	1,700.00
6. Jamaica (113 units) Core House 34 M² Lot 465 M²	389.00	22.8	915.00	26.90	53.6	109.00	6.4	294.00	.63	17.2	1,700.00
7. Ecuador (flat & low lying terrain) Lot & Latrine 129.5 M²	88.00	28.0	-	-	-	175.00	56.0	52.00	.40	16.0	315.00
8. Ecuador Lot & Services 129.5 M²	160.00	33.0	-	-	-	175.00	34.0	161.00	1.25	33.0	496.00
9. Ecuador Roof-floor 50 M² Lot 129.5 M²	445.00	28.0	675.00	13.50	43.0	175.00	11.0	293.00	2.80	18.0	1,588.00
10. Ecuador Core House 50 M² Lot 129.5 M²	540.00	28.0	930.00	18.50	48.0	175.00	9.0	293.00	2.80	15.0	1,938.00
11. Ecuador (well drained soil) Lot & Latrine 129.5 M²	89.00	28.0	-	-	-	175.00	54.0	57.00	.40	18.0	321.00
12. Ecuador Lot & Services 129.5 M²	155.00	32.0	-	-	-	175.00	37.0	147.00	1.44	31.0	477.00
13. Ecuador Roof-floor 50 M² Lot 129.5 M²	348.00	29.0	498.00	10.00	41.0	175.00	14.0	193.00	1.50	16.0	1,214.00
14. Ecuador Core House 50 M² Lot 129.5 M²	443.00	28.0	756.00	15.00	49.0	175.00	11.0	193.00	1.50	12.0	1,567.00

APPROXIMATE COST PER SQUARE METER OF CONSTRUCTION OF HOUSING AND UTILITY SERVICES

IN US DOLLARS - OCTOBER 31, 1970



Source: Costos Comparativas en America Latina December 1970. Inter-American Development Bank Chart No. 1 pg. 3

Note:
1) Equivalent Cost in U.S. Dollars as of 31 October 1970
2) Urbanization standards include Macadam Streets, running water sewer, electricity for net area of usable land.

of the capital.

7. Summary

The full effect of these findings can be illustrated by summarizing the cost findings of the various field studies carried out by FCH. Sixteen hypothetical alternative and progressive "Project Standards" are the result and they are calculated for their cost effect to construct a $30m^2$ and a $25m^2$ shelter on $100m^2$ and $65m^2$ lots. Note in Table 3 that the cost intervals up to the next higher "Standard" of quality of urbanization, land and fees is, typically, not greater than $150. The number of useful direct and cross combinations of solutions which result in a total cost no higher than $1,500 runs into the dozens.

A glance at the table shows that the greatest savings within one of the four "Project Standards" groups and between consecutive "Standards" is between items 1, 2, 3, and 4. Reduction of any of the shelter construction schemes to a "site and service" program will free the greatest amount of money for the purchase of more desirable project land or more utilities. The potential redistribution of funds by this policy is at least $375 to over $1,000 per unit.

A reduction of shelter and lot sizes from solutions "A" to "B" also causes corresponding reductions in cost which are sufficient to enable an increase of location and urbanization standards to the next higher "Standard" of quality. In FCH's minimum shelter concept where a) the dwelling is intended to be improved by increments, b) urbanization standards are less easy to upgrade and c) the location will, of course, be invariable once it is selected, it is important to keep options of design open in order to fashion the very best solution.

TABLE 3

Comparative Advantages of Cost Reduction Policies

for a Single-Family, One Story Housing Solution

	Estimated Average Unit cost for Bldg. area and land	Development Standard	
		A 30 M^2 House 100 M^2 Lot	B 25 M^2 House 65 M^2 Lot
Construction Cost			
1. Completed House	$35/M^2	$1,050	$875
2. Core House	$25/M^2	750	625
3. Floor-Roof Shelter	$15/M^2	450	375
4. Site and Service Program	no building cost	-0-	-0-
Urbanization Cost (includes water to street and electricity)			
5. Sewer, Paving, House tap, Community Building	$5/M^2	500	325
6. Sewer, Paving, House tap	$3.50/M^2	350	226
7. Latrine, Drainage, Community tap	$2/M^2	200	130
8. Latrine, Community tap	$1/M^2	100	65
Land Cost			
9. Good Urban Location	$5/M^2	500	325
10. Second Urban Location	$3.50/M^2	350	226
11. Government Subsidy Land	$2/M^2	200	130
12. Rural or High Subsidy Land	$1.50/M^2	150	98
Development Fee, Overhead and Other Costs			
13. 40% of the above		500	500
14. 30% of the above		375	375
15. 20% of the above		285	285
16. 10% of the above		122	122

It is also clear from Table 3 how a private non-profit sponsor taking ten percent less in fee over public and profit-motivated sponsors can provide an additional $100 per unit in development purchasing power and deliver a superior product to its beneficiaries.

C. Consumer Costs for Housing

FCH has concluded from the scarce and reasonably reliable data which exists, that the market for the minimum shelter approach is for that group earning the equivalent of between $250 and $750 per year. In Ecuador (volume 1, Figure 1 p. 24-A) this group is shown roughly as the lower 38% of the urban population which can pay from $5.25 to $15.00 a month for housing. These are the semi-skilled and skilled people who live in tenements and who have taken the initiative to become squatters on government land or marginal terrain near the center of towns. In rural areas this income group is virtually the entire elite independent farmer section - aside from a few very wealthy, large land holders.

The percentage of monthly income available for housing does not vary significantly from fifteen to twenty percent at this income level in Latin America. It is chiefly influenced by the relative cost of simple, staple foods for which these countries are generally self-sufficient.

Loan finance costs for housing to benefit the lowest income groups vary widely in the country surveys from 3% to 8% from government lending agencies and from 5% to 12% from private financial sources. Terms for government loans are typically 20 years although 10 and 16 year terms are encountered. Private housing loan terms range from 3 to 5 years up to 15 years. Twenty year terms may be available from private sources for houses costing from $3,000 and up.

What a $10 Monthly Mortgage Payment Buys

TABLE 4

Interest Rate	Term and Size of Mortgage			
	20-year	25-year	30-year	35-year
3-1/2%	$1,720	$2,000	$2,230	$2,420
4%	1,650	1,890	2,990	2,260
4-1/2%	1,580	1,800	1,970	2,110
5%	1,520	1,710	1,860	1,980
5-1/2%	1,450	1,630	1,760	1,860
6%	1,400	1,550	1,670	1,760
6-1/2%	1,340	1,480	1,580	1,660
7%	1,290	1,410	1,500	1,570
7-1/2%	1,250	1,350	1,450	1,500
8%	1,200	1,300	1,350	1,450
8-1/2%	1,150	1,250	1,300	1,350
9%	1,125	1,200	1,250	1,275
9-1/2%	1,075	1,150	1,200	1,225
10%	1,025	1,100	1,150	1,175
11%	975	1,025	1,050	1,075
12%	900	950	975	1,000

TABLE 5

Effect of Interest Rates and Term on Monthly Payments -- $1500 Mortgage

Monthly Payments

Term Years	Interest Rates															
	3%	3-1/2%	4%	4-1/2%	5%	5-1/2%	6%	6-1/2%	7%	7-1/2%	8%	8-1/2%	9%	10%	11%	12%
5	$26.95	$27.30	$27.63	$27.97	$28.31	$28.66	$29.00	$29.35	$29.71	$30.60	$30.42	$--	$31.14	$31.87	$--	$33.37
10	14.49	14.83	15.19	15.55	15.91	16.28	16.65	17.03	17.42	17.81	18.20	18.60	19.01	19.83	20.67	21.53
15	10.36	10.72	11.01	11.48	11.86	12.26	12.66	13.07	13.48	13.91	14.34	14.78	15.22	16.12	17.05	18.01
20	8.32	8.70	9.10	9.50	9.90	10.32	10.74	11.18	11.63	12.09	12.55	13.02	13.50	14.48	15.49	16.52
25	7.32	7.50	7.92	8.34	8.77	9.21	9.70	10.13	10.60	11.09	11.58	12.08	12.59	13.64	14.71	15.80
30		6.74	7.20	7,60	8.10	8.51	9.00	9.50	10.00	10.49	11.01	11.54	12.07	13.17	14.29	15.43
35		6.20	6.64	7.10	7.60	8.10	8.60	9.10	9.60	10.12	10.66	11.21	11.76	12.90	14.06	15.24
40		5.81	6.31	6.74	7.23	7.73	8.10	8.80	9.32	9.88	10.43	11.00	11.58	12.74	13.93	15.13
50		5.31	5.81	6.30	6.81	7.34	7.91	8.51								

$7.50 $8.00 $9.00 $10.00 $11.00 $12 $13 $14 $15

Mortgage terms with a lower interest rate and a longer term enable the buyer to finance more construction and a better lot for his house. Higher interest rates mean more of the monthly payments goes as fee to the lender. In Table 4 for a fixed $10 monthly mortgage payment, a buyer may purchase $1,400 worth of construction and a lot with a 6% mortgage at 20 years, but only $1,200 worth of construction and a lot with an 8% mortgage at 20 years. With a 35 year mortgage term, however, at 8%, the buyer can purchase a house and lot worth $1,450.

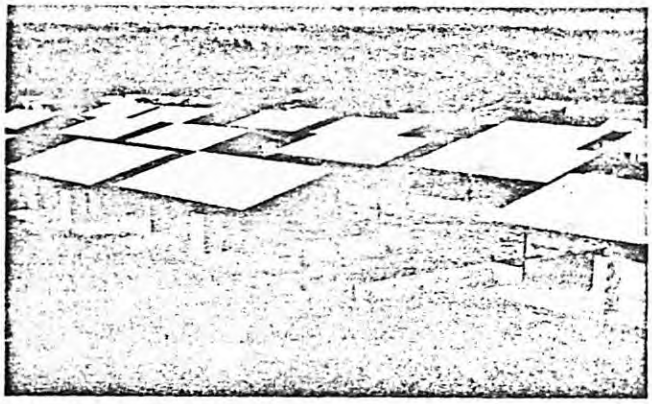
Table 5 shows another way to state the same principle. For a minimum shelter worth $1,500, a buyer with a 6% mortgage and 20 year term pays $10.74 per month. If the buyer has an 8% mortgage for 20 years, he must pay an additional $1.81, or $12.55 per month. For buyers with a monthly income of $40, this increase is equal to an increase in his monthly housing budget of 17%, or from 26.8% to 31.3% of his monthly income.

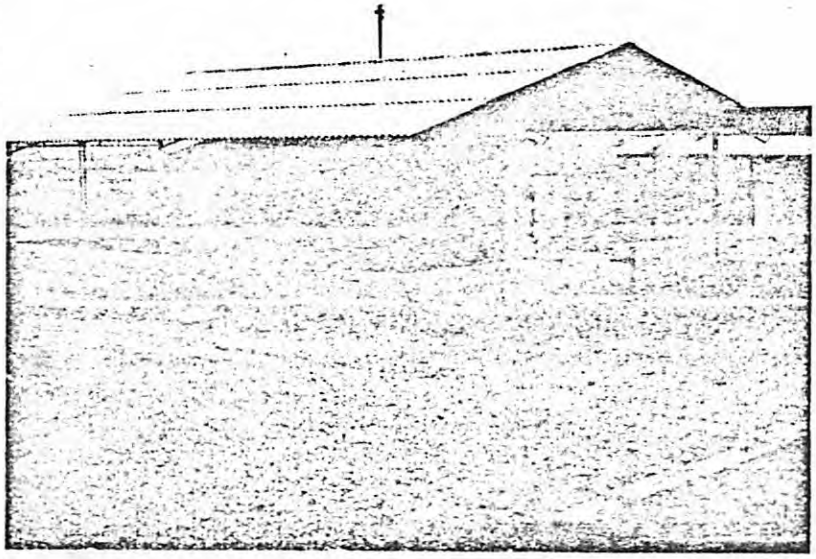
If no adjustments are subsequently made in the house cost, and assuming that the maximum proportion of income available for housing may not be increased, the market for the $1,500 house will pass up to the population group earning $50 per month. This will certainly reduce the effective demand for housing in this cost range.

The principal underlying FCH's recommended approach to minimum shelter is that through the use of various mixes of housing components from simple site and service up through complete or core houses the construction costs can be adjusted to meet the minimum housing needs of the largest group of people with low to moderate incomes. This approach along with encouraging

and developing institutions which will provide favorable financial terms for housing will mean that a maximum number of people will be able to pay for housing and will have the opportunity to buy the best housing which can be made available.

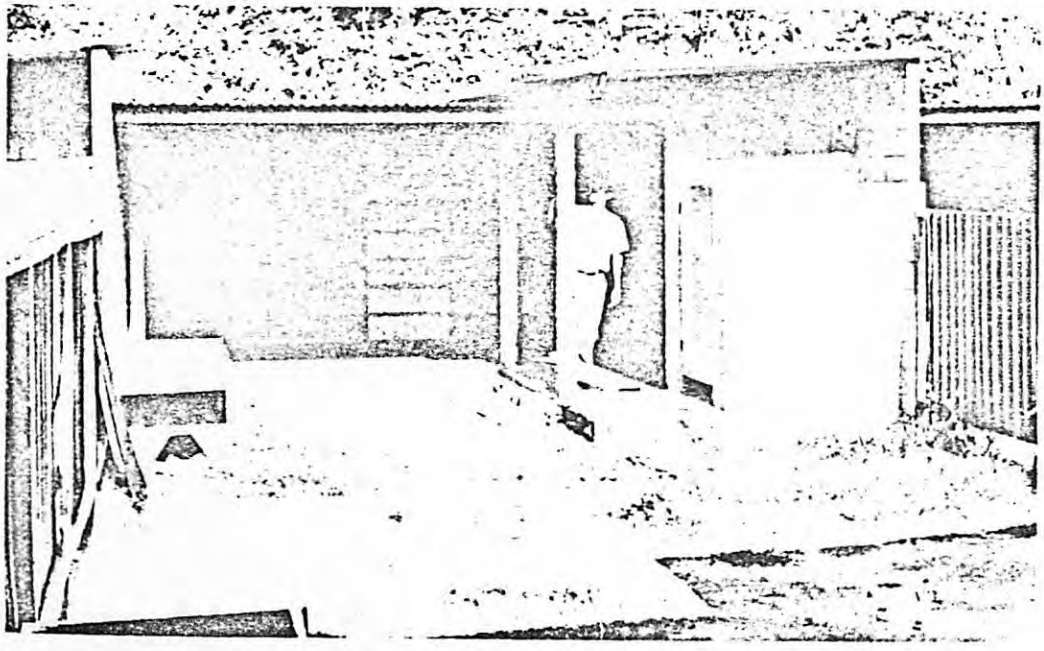
COLOMBIA





Neiva, Colombia.
Duplex Roof and Floor units
with a toilet core.

EL SALVADOR



These units built by the Fundacion de Desarrollo y Vivienda Minima have only three walls to permit rapid expansion by the occupants using material from their former squatter shack.

II. LOW-COST HOUSING IN GUATEMALA

BACKGROUND

Guatemala has an extremely varied geographical and population distribution of its 5.26 million inhabitants. Fifty percent of the people, principally of Indian origin, are intensely concentrated in great poverty on their traditional land in the western altiplano. The second great center of poverty is among the 20% of the population who have recently been attracted away from the farms into the capital city.

An overwhelming need for low-cost housing of a cost of approximately $1,500 and under exists in both the urban and rural areas of Guatemala. Attention to this income group has been practically non-existent up until the last two years. Most of the on-going effort in housing has been directed at housing units costing more than $2,000 and located in Guatemala City. Continued concentration of investments in the capital only increases its attractiveness for migrants in relation to conditions in the secondary towns.

The Government estimates that in 1970 approximately 250,000 rural dwellings and 190,000 urban units were deficient. Approximately 50,000 urban dwellings are needed for new housing costing between $1,000 and $2,000.

Income data indicates that if low-cost housing and house improvement lending facilities were available, the dwellings and loans would be acquired and paid for within current borrowing conditions by families now outside of the existing housing programs who live in the secondary towns and rural areas.

HOUSING NEED

Two-thirds of Guatemala's approximately one million households live in rural areas and one-third live in towns and cities. More than 44% of the population live in 440,000 dwellings currently classified as deficient; the majority of these units are located in urban areas.

The capital, with 45% of the urban population, has the highest concentration of poor housing and these conditions are worsening at a faster rate than in the country as a whole. It is growing at a rate of 4.9% per year compared to the national rate of population increase of 3.3% per year. A faster growing area, however, is the southern coastal zone and the towns of Coatepeque, Sta. Lucia, Pueblo Nuevo Tiquisate and Escuintla.

In the last housing census of 1964, it was found that 50% of rural houses and 13% of urban dwellings have roofs of thatch; 90% of rural houses have flimsy cane or mud plaster walls and only 9% have access to public water. Although the majority of urban houses are serviced by public water, electricity and at least a latrine; only 4% of rural houses enjoy electrical service and 10% have latrines.

HOUSING DEMAND AND INCOME

Figure 2 shows that the average urban income varies between $1,000 and $1,250 according to the character of the urban center. The most serious housing problem exists among the recent migrants and urban poor of the capital and major towns. Average monthly income of residents in squatter communities in Guatemala City as given on the following page in Table 6 is only $43.

TABLE 6

SURVEY OF FAMILY INCOME OF SQUATTER COMMUNITIES IN GUATEMALA CITY - APRIL 1968

Annual Income	Monthly Income	Number of Families	% of Community Population
$0-240	$1-$20	325	15.3
241-480	21-40	628	29.7
481-720	41-60	641	30.3
721-960	61-80	212	10.0
961-1200	81-100	121	5.7
1201-1450	101-120	26	1.2
1451-1680	121-140	12	0.
1681-1920	141-160	10	0.5
1920 or more	161 or more	2	0.1
Unknown	Unknown	139	6.6

Average Income $43/month

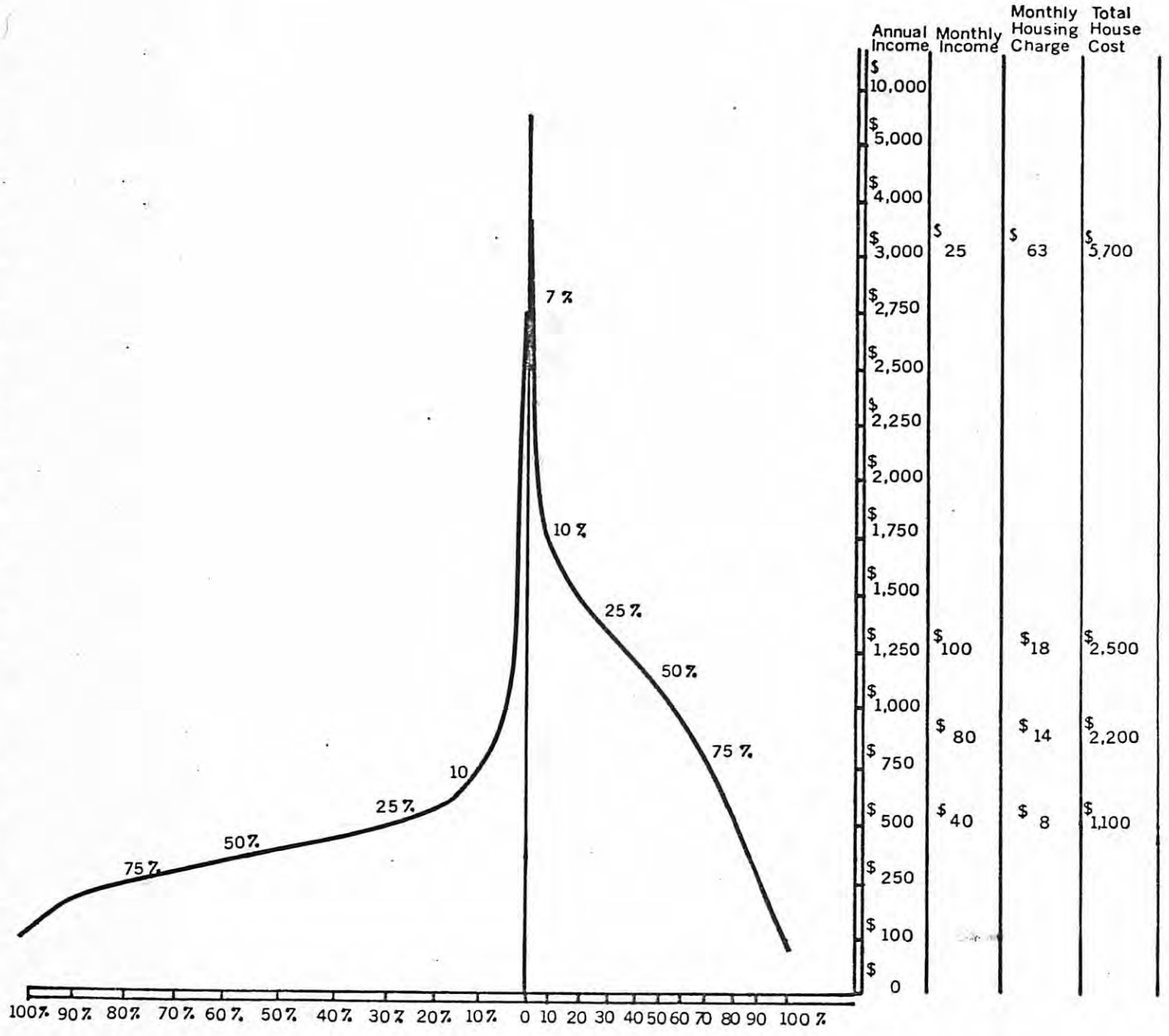
INVI, the National Housing Institute, has set the following general standards based on observations regarding family budgets for lowest income urban residents:

EXPENDITURES FOR SUBSISTENCE NEEDS

1. Food, clothing	45%
2. Savings	10%
3. Housing	15-20%
4. Medical, transport, miscellaneous	25%
	100%

GUATEMALA

FAMILY INCOME AND HOUSING



RURAL POPULATION (67%)

3,520,000 people
÷5 = 704,000 families

URBAN POPULATION (33%)
including Guatemala City
1,740,000 people
÷5 = 350,000 families

Source: Ingresos y Gastos del Asalariado Agrícola by R. A. Orellana, Insto. de Investigaciones Económicas y Sociales, U. de San Carlos - 1966 (Cuadro 32 Pg. 150) and: Diagnóstico Preliminar del Problema de la Vivienda en Guatemala, Insto. Nacional de la Vivienda, Oct. 1967 (Cuadro 11 Pg. 57) Note: Assume 20% of urban population earns less than $40 per month (Pg. 59).

The National Housing Institute prepared a study in 1970, based on the 1964 census, of the effective economic demand versus total need in the capital and 31 cities and towns. The study was limited in its scope in that only persons currently renting housing were included in the estimates. It ignored those who were housed below their capacity to pay because of the general shortage of housing and those in substandard housing. Results of the study are as follows:

TABLE 7

EFFECTIVE DEMAND IN 32 CITIES AND TOWNS (1970)

	Guatemala City	Other 31 Towns	
Total Need	50,141	66,618	
Total Effective Demand	29,000	5,000	
Demand for Housing Costing $1,000-$2,000	16,697	3,802	Total 20,500
Demand for Housing Costing More Than $2,000	12,234	1,203	

A second look at Figure 2 shows that at least twelve percent urban residents in all conditions of occupancy, representing 50,000 families, have earnings between $400 to $700 yearly. Assuming a conservative rate of growth of this group of 2.5%, the need for housing costing no more than $1,500 is increasing by 1,200 urban units per year.

In rural Guatemala, 50% of the population earns between $200 and $500 per year. This group falls in the market range for housing costing a maximum of $750 per dwelling and corresponds to an effective demand of 150,000 units.

THE ROLE OF PUBLIC INSTITUTIONS

1. INVI

The history of government built housing in Guatemala dates from 1935.

Not until 1956, however, was a national housing agency formed. In 1965, two housing institutions were merged to become the Instituto Nacional para la Vivienda (INVI). INVI develops housing that is below the minimum value requirements of $5,000 established by private banks. All houses are built for sale and INVI lends and insures mortgages for the houses it builds and for home improvements. A savings and credit program is under development within INVI to provide a means for the poorest citizens to accumulate funds to make the minimum down payment required for INVI housing.

The level of publically assisted house construction has fluctuated widely in recent years as shown in Table 8. During the six-year period, 1965-1970, 6,458 houses were built; an average of 1,076 per year. Over 80% of urban house construction by government agencies has occurred in the capital.

INVI urban public housing does not directly make use of subsidy to reduce monthly charges. A 12% INVI administration and development fee is added to the total house cost and the 2% monthly service fee defrays the agency collection expenses. House cost ceilings, however, are fixed and thus construction costs that run in excess of ceilings are absorbed by the government; this equals an average annual subsidy of $2 million.

2. INTA

For 13 years preceding 1968, INTA built a total of 1,500 dwellings or 140 units per year in agricultural colonization sites. From 1957 to 1965, USAID grants and matching government funds provided a subsidy of 50% to 60% of the cost of the units. From 1966 to 1968 IDB and the predecessor of the National Agricultural Development Bank (BANDESA) financed some 250 INTA built units at 5% interest for a 20 year term. The average sales price was $1,200. Current government rural development plans call for the absorption of INTA

and its functions by the appropriate government ministries.

The basic INTA house was a two or three bedroom unit of 51 to 63 square meters in area. Costs ranged from $800 to $900 plus $200 to $300 for water, electricity, and sewage disposal.

TABLE 8

GOVERNMENT URBAN HOUSING CONSTRUCTION

BY INVI AND PREDECESSORS

A. Volume Per Year

Year	Average Cost per Dwelling	Number
1935	NA	180
1949	$1,780	312
1950	4,125	81
1951	510	625
1954	6,250	74
1955	1,280	59
1956	1,620	689
1959	1,820	579
1960	2,560	864
1961	2,600	854
1962	2,890	620
1963	6,380	180
1964	4,350	484
1965	4,000	519
1966	8,250	247
1967	2,041	2,814
1968	2,041	1,857
1969	2,041	623
1970	NA	398
	20	12,058

B. Concentration of Construction

Guatemala City	10,262 units or 80+%
Escuintla	468 units or 3.5%
Quezaltenango	385 units or 3.2%
Retalhuleu	209 units
Antiqua	134 units
Mazatenango	130 units
Coatepeque	128 units
San Marcos	104 units
Zacapa	74 units
La Gomera	62 units
Izabal	50 units
Colomba	60 units
Charcha, A. V.	40 units
Sta. Lucia Cotz	38 units
Huehuetenango	13 units

3. BANDESA

The Banco para el Desarrollo Agrario (BANDESA) and its predecessor agencies have made credit available to credit unions and agricultural multi-purpose cooperatives. On two occasions new cooperative housing projects have been built with a BANDESA loan. Credit unions and agricultural cooperatives regularly make a small number of loans to their members for housing using the funds of their associations.

THE ROLE OF PRIVATE INSTITUTIONS

1. Savings and Loan Institutions and Banks

Savings and loan institutions specializing in making investments in

housing were authorized by law in 1948 and began operations in 1962. The two major mortgage lending institutions make a total of about 800 housing loans per year for dwellings costing $5,000 and more.

A secondary mortgage bank and mortgage insurance institution titled the Instituto de Fomento de Hipotecas Aseguradas (FHA) was created in 1961. The purpose of the FHA is to supervise activities of savings and loan institutions, to provide loans for them and invest in mortgages held by the institutions. Although the minimum authorized insured loan is $1,000, the FHA has established a minimum low mortgage limit of $4,800.

Savings and loan institutions and private banks currently have substantial incentives to increase their support of the private house construction industry. AID has made a total of $20 million in loans and guaranties to the Central American Bank for Economic Integration. Two million dollars was received by the Banco Granai and Townson and three other institutions in Guatemala.

Officials report, however, that a surplus of houses costing more than $5,000 exists in the capital. The FHA and savings and loan institutions have a surplus of investment funds for mortgages which are not in demand by builders. Representatives of the Inter-American Development Bank (IDB) report slow sales of units costing in excess of $2,000 in the secondary towns. It may be anticipated that the effect of the market weakening for middle income housing may encourage bankers and builders to begin construction for the lower income market.

2. Cooperatives

INVI completed one cooperative housing project "El Modelo" in the town of Escuintla in 1969. This 177-unit project was developed with technical assistance provided by FCH Services under a USAID Guatemala contract. It is a single-mortgage cooperative (occupants own shares in the organization, but

not deeds) and is at present the only INVI housing project that has never experienced a mortgage repayment delinquency. The unit cost is $2,700. Since the organization of the El Modelo Housing Cooperative, INVI has undertaken relatively little subsequent activity for cooperative development.

Rural housing programs for independent farmers in Guatemala are carried out by the credit unions and multi-purpose agricultural cooperatives. Finance, in a few cases, for new housing has come from BANDESA with IDB loan funds. Since 1968 more than one hundred units have been constructed in this manner. The agricultural cooperatives use their tangible farm equity as security for the housing loan.

Credit unions and agricultural multi-purpose cooperatives have also made home improvement loans to their members and report strong demand in rural areas for such loans at the close of harvest time. Loan repayment experience at twelve percent interest per year on the declining balance is good.

According to Table 9 . the Department of Agricultural Cooperatives of the Ministry of Agriculture, ten housing cooperatives are recognized. Of the ten, only the El Modelo Housing Cooperative had housing for its members and the others were either seeking financing and technical assistance for their projects or had dissolved. No federation of housing cooperatives exists.

3. Fundacion del Centavo

A home improvement loans project in Ipala, Chiquimula has been initiated by the Fundacion del Centavo, a private, non-profit development organization. A loan of $5,200 at eight percent for 31 months was made to the "Comite Pro-Mejoramiento de la Vivienda de Ipala" to finance home improvement loans that range from $300 to $450 to its 20 members. Each member of the Comite, in turn, signs a sub-loan contract with the board of directors of that association.

Private banks report their willingness to make home improvement loans at a minimum of $1,000 to individuals. Such loans would not currently be marketable to low income borrowers because of high loan security requirements.

HOUSING SUPPLY

With a population of one million households and a growth rate of 3.3%, it is evident that housing statistics in Guatemala are failing to record ninety percent of the source of shelter that 33,000 new families each year are discovering for themselves. The average production per year for the past few years shown in Table 9. indicates that only about 3,240 units are provided by the building industry. It can be assumed that the remaining 30,000 new families in Guatemala each year are living in new or used housing that is more or less in a general state of deficiency. Moreover, as was demonstrated previously, over 80% of the new standard housing built since 1935 has been located in the capital where only one-fifth of the people live.

TABLE 9

AVERAGE HOUSE BUILDING ACTIVITY OF THE BUILDING INDUSTRY PER YEAR FOR THE PERIOD 1968-1970

Housing Development Resources	Number of Dwellings
Traditional Lending Sources	1,200
Two Savings and Loan Associations	800
Cooperatives and Non-Profit Associations (10)	100
Instituto Nacional de Vivienda (INVI)	1,000
Instituto Nacional de Transformacion Agraria (INTA)	140 (up to 1968)
	3,240 dwellings

It is estimated that as much as 50% of the annual investment in standard housing in recent years has been financed either by AID or IDB. Less than 20% of the construction by government agencies has been carried out wholly with public funds. The remainder of the funds have been drawn from savings and traditional lending sources at high rates of profit and interest. Ninety percent of new construction that is recorded is probably carried out by traditional self-help finance and construction.

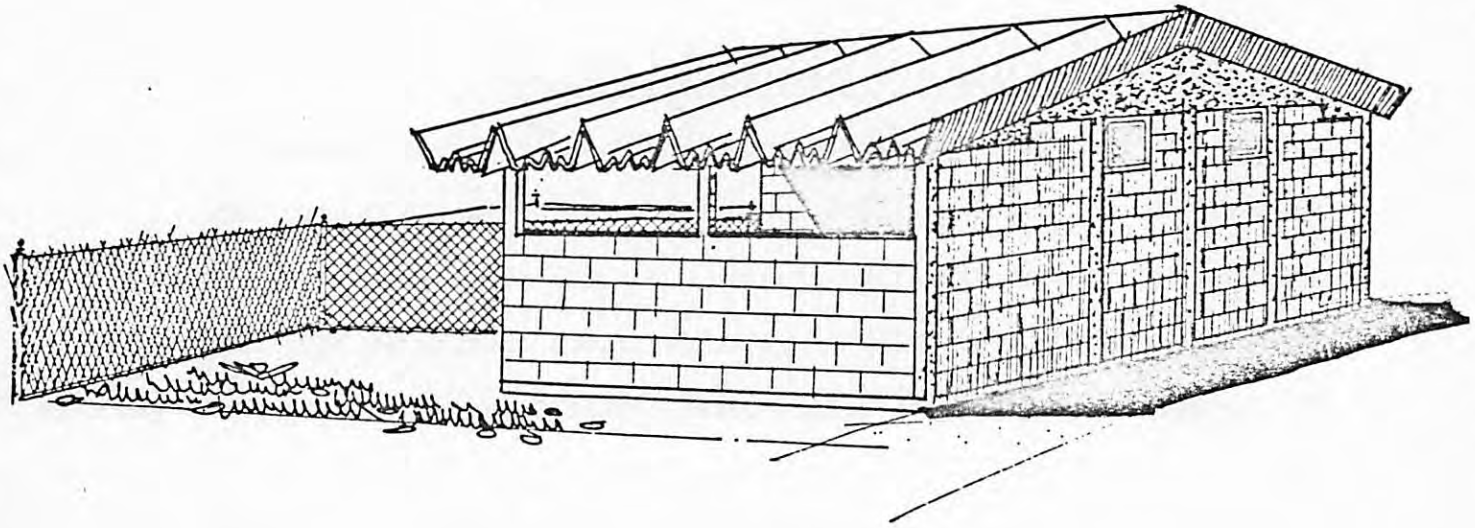
STANDARDS FOR DEVELOPMENT OF HOUSING COSTING $1,500

The National Urban Housing Agency (INVI) has completed construction of 700 shell houses costing $1,100 as part of the recent 5,000 unit Inter-American Development Bank loan program. A rural multi-service cooperative completed construction of 117 complete dwellings costing $1,200, financed with income derived from an agricultural credit loan originating also from the IDB.

INVI's shell house program employs many imaginative ideas. Three walls and a roof enclose a paved floor of 24.3 square meters on a lot of 95 square meters. Water and sewage facilities are provided. The only internal walls partition a separate toilet and shower compartment. There are no doors and only one small bathroom window. Front walls are at the front lot lines separated from facing units by a five-meter wide pedestrian right of way. Rear walls are intended to be filled in by the occupants with material from their previous squatter shack. With a 9%, 20-year mortgage, the total monthly payment is $10.

GUATEMALA

NATIONAL HOUSING INSTITUTE



DWELLING COST
$1,100

DWELLING AREA
25 M^2

TABLE 10

SUMMARY OF COST FOR THE INVI SHELL HOUSE BUILT IN THE SAN RAFAEL II PROJECT IN GUATEMALA CITY: 700 UNITS

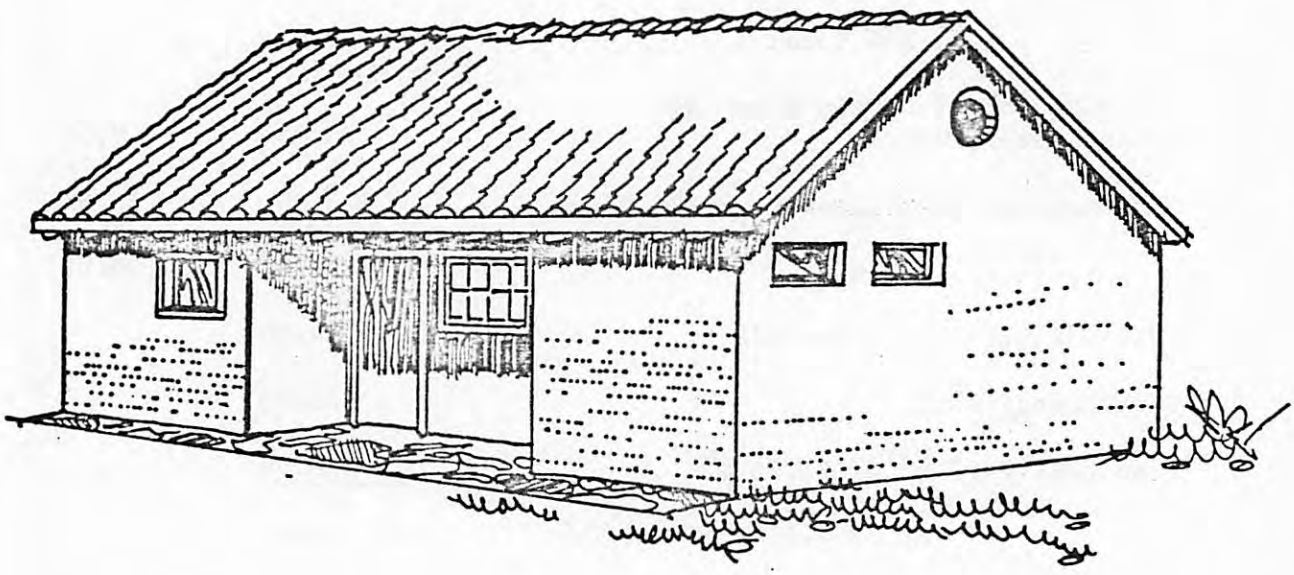
SALES PRICE $1,100

1.	Walls (hollow core clay tile 4" thick)	$165.00	21.0%
2.	Roof (A.C. structural channel)	135.00	17.5%
3.	Foundation (structural tile and block)	85.00	11.5%
4.	Floor (cement tile)	67.80	8.5%
5.	Drainage, Electricity, Plumbing, Steel Window	130.36	16.5%
	Sub Total	$583.81	
6.	Toilet & Shower Fittings by INVI (and water meter)	75.00	9.5%
7.	Urbanization Cost (density 80-85 DU/Ha.)	120.00	15.5%
	Sub Total	$778.81	100.0%
8.	INVI Administration Fee 12%	94.00	
9.	Contingencies 5%	43.70	
10.	Land cost 94.5 m^2 at $1.95 m^2	183.49	
	At $26.40/$M^2$, Total Cost	$1,100.00	

The housing cooperative of San Juan Argueta, Sonola, of the "La Union Multi-Service Agricultural Cooperative" comprises 117 clustered, detached houses of a floor area of 84 square meters on lots of 300 square meters. Each dwelling unit consists of three bedrooms of 12 square meters each, a storage room and a central kitchen-dining room in which an open fire for cooking is located. Walls are of white-washed adobe block and roofs are of traditional tile over a board ceiling. Floors are baked tile. The adobe

GUATEMALA

"MARIA TECUN" RURAL COOPERATIVE



DWELLING COST
$1,200

DWELLING AREA
84 M²

brick, roof tile and floor tile are manufactured by the cooperative members on the site. Water is piped to each lot and costs thirty cents per month. Because of the extensive self-help participation of co-op members, the construction cost is low, $11.80 per square meter of floor area. The monthly charge for an 11.5%, 20-year mortgage is $12.80. A summary of loan and mortgage terms is shown in Table 11.

TABLE 11

SUMMARY OF LOAN TERMS FOR LOW AND MODERATE INCOME HOUSING AND HOME IMPROVEMENT IN GUATEMALA

Institution	Amortization & Interest	Service Fee	Insurance Fee	Total	Term Years	Loan Character & Maximum Mortgage Value
INVI	4%	2%	1%	7%	20	$800 Site and services (proposed)
	6%	2%	1%	9%	20	$1,100 Shell house (no down payment)
	8%	2%	1-2%	11%	20	$2,400 Self-help & contract (10% down payment)
	8%	2%	1% (FHA)	11%	20	$4,500 (10% down payment)
INTA	5%			5%	10	$1,100 (Wood house)
	5%			5%	20	$1,200 (Masonry house)
Savings & Loan Institution	8-9%	1-3%	1% (FHA)	12%avg	15-20 20	$4,800 and up No limit on house
Co-ops	8-12%			12%avg.	2-3	$500 (Home improvement)
Fundacion del Centavo	8%	2%		10%	varies	Any loan

Government housing agencies and private philanthropic organizations such as the Fundacion del Centavo find that nine or ten percent is the minimum interest rate that can be charged for urban low-cost housing without excessive

subsidies. For a term of 20 years at nine percent, a family earning $700/year or $58/month would pay 23% of its income for a $1,500 dwelling. This is not more than many of these families are currently paying. For the average family in squatter communities with an income of two or three dollars per month, the share is 31 percent, which is excessive and must be reduced to a 50-year term before the monthly charge would fall below 26% of income.

Land costs in Guatemala vary from $0.15 per square meter in rural areas to between $15 and $20 in urban areas. A median cost for raw land adjacent to the capital and cleared for building would be about $1.50 per square meter.

INVI has pioneered an imaginative approach to self-help housing for the reduction of construction costs. Current practice is for future owners to dig trenches and assist in pouring concrete for strip footings. During this process other participants mix soil and cement and operate a battery of soil-cement block machines. Participants also distribute blocks to the construction site, bend and wire reinforcing steel for concrete work and clean up after construction.

Each husband and wife must complete 1,000 hours of labor and are credited with 20 cents per hour toward their house down payment. A limited amount of labor hired by the participant is allowed. Actual assembly of the 711 units currently being built in this manner is done by a building contractor. Approximately 4,000 dwellings or 1/3 of all construction by the government since 1956 has utilized various techniques of self-help construction.

Because major construction in Guatemala has been confined to the capital region, there is little information available regarding required overhead cost and fees for programs in the secondary towns and rural areas. One private builder estimates that project calculations would require a contingency fund of up to ten percent compared to the two or three percent required in Guatemala City.

Indirect and direct overhead costs allowed by the IDB in the capital should not exceed 35 percent of construction costs. These costs, as detailed by private builders, are as follows:

Profits	8-10%
Central Office Overhead	12%
Direct Project Overhead	8%
Contingencies	2-3%
Total	33-35%

Costs of indirect and direct overhead cost for projects outside of the capital in other towns as estimated by INVI are as follows:

Profits	8%
Office Overhead	12%
Direct Overhead, including 8% additional transport & equipment	16%
Contingencies	5%
Total	41%

RECOMMENDATIONS

Recommendation No. 1

A program for the construction of low-cost housing in secondary towns and rural areas of Guatemala should be encouraged and assisted by USAID for the following reasons:

a. To continue forward recent attention by the government housing agency to the construction of lowest-cost housing.

b. To correct the past excessive centralization of housing investments in the capital city which may be a stimulus to population migration.

c. To develop alternative urban growth poles closer to regions of agricultural expansion as a complement to the AID assisted Agricultural Sector Development Program.

d. To encourage the formation of a corps of stable leadership in related private agencies which will focus the attention of the nation in a consistent manner on problems of improvement of basic low income living standards as government policies and resources change.

Recommendation No. 2

The bulk of activity for the construction of low-cost housing of an AID assisted loan should be assumed by the government housing agency, INVI.

a. Costs for the current INVI core house may be reduced if carried out in conjunction with self-help techniques at present employed by the Institute for middle income housing. Erection of dwellings should be by contract.

b. INVI's low-cost core house project should include, from the beginning, the organization of a home owners association; a savings program so that participants can accumulate a minimum down payment and become used to making

monthly mortgage payments; and a training program to prepare participants for living in and expanding their new home.

c. It is recommended that funds totaling approximately $3 million be made available to INVI for the construction of 3,000 dwelling units in secondary towns over a four-year period. The extended time estimated for completion of the program is necessary due to the general unfamiliarity of the Institute with construction and community development activities outside of the capital and its centralized administrative structure.

Recommendation No. 3

Cooperative organizations which have in the past assisted their members in the construction and improvement of their housing should be assisted in expanding these activities. Because these organizations have the most extensive network of representation in rural areas and secondary towns, assistance directed in this manner would realize the most efficient, direct distribution of service beneficiaries.

a. Active cooperative organizations should be brought together in a private, non-profit, technical service organization to plan and implement the mutual housing program. INVI may be presented as a co-member in anticipation of services it may grant to the development of specific cooperative housing projects and programs.

b. The cooperative service organization for housing should develop low-cost, single mortgage cooperative housing projects with monthly mortgage payments to include reserves for delinquency, maintenance and operations.

c. Cooperative housing should be encouraged for development without subsidy of land costs or interest terms so as to demonstrate the practicality

of the extension into low-cost housing by loan facilities of existing conventional financial institutions.

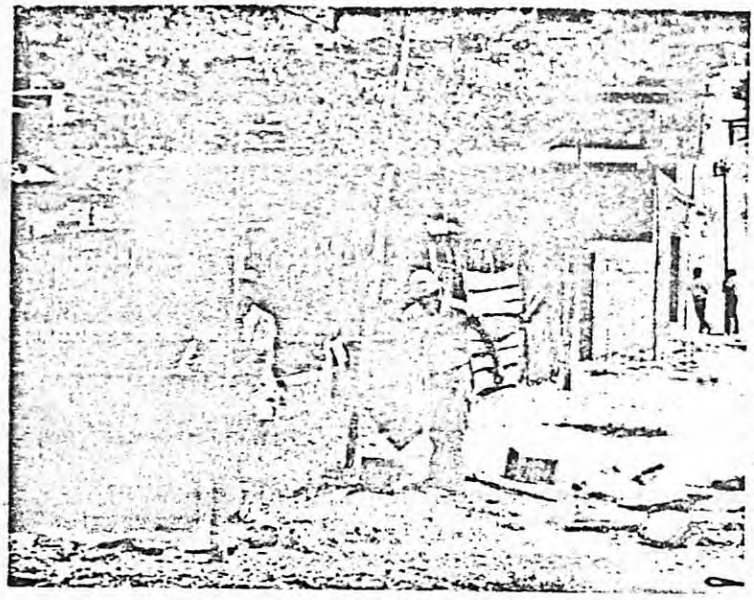
d. It is recommended that funds totaling approximately $1 million be made available to cooperatives for the construction of 1,000 units in rural areas over a three-year period.

Recommendation No. 4

Direct assistance in the form of credits for low-cost home improvement loans should be made available to selected agriculture and credit cooperatives through the credit union federation "FENACOAC."

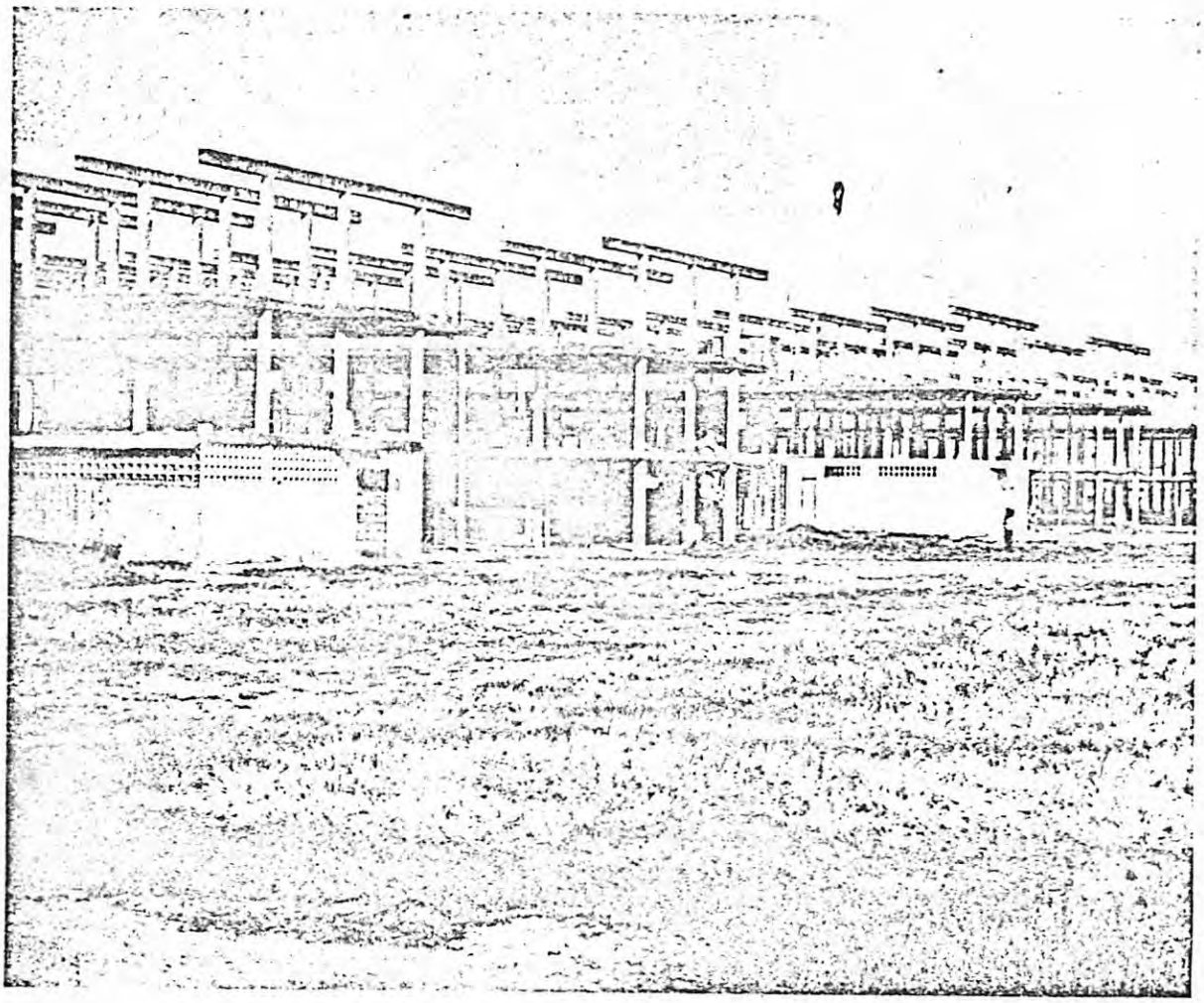
a. The cooperative service organization for housing may provide assistance in planning and training of co-op personnel in making such loans. Methods of applying this technical assistance are described in the attached FCH publication, FINANCING SELF HELP HOUSING AND HOME IMPROVEMENT: THE CREDIT UNION SYSTEM WITH THE PARTICIPATION OF HOUSING TECHNICAL ASSISTANCE ORGANIZATIONS.

b. A revolving fund of $500,000 should be established within FENACOAC to continue such assistance for home improvement loans with a maximum value of $500.00 for a three-year term.



Santa Marta, Colombia
The people who need minimum shelter to make a start will gradually improve their houses as their personal finances permit.

COLOMBIA



Cali, Colombia
Meanwhile, more ambitious government sponsored housing projects have remained vacant for years while funds are accumulated to complete them and install the utilities.

III. LOW-COST HOUSING IN EL SALVADOR

BACKGROUND

The chronic problems of Latin America appear to converge upon and be intensified within the borders of the smallest of the continental republics. El Salvador comprises slightly less than 8,000 square miles (20,000Km^2). The dominant economic activity is agricultural and there are no important natural resources. Labor is abundant and inexpensive. The population density of the 3,500,000 Salvadorions is one of the highest in the hemisphere with the result that urbanization pressure, unemployment and under-employment are acute. Approximately 60% of the people live in rural areas and 16% live in the capital metropolitan area. The remaining 24% reside in 31 towns of more than 5000 inhabitants.

The government estimates that in 1970 approximately 170,000 rural houses were deficient and 146,760 urban houses were deficient. Approximately 68,000 urban dwellings are needed for new housing, costing between $1,000 and $2,000. The effective demand for housing costing no more than $1,500 is 32,000 urban units and 153,000 rural units. Private housing programs have demonstrated that the economic capacity to pay regularly for housing exists among families of the income class of between $400 and $700 per year.

HOUSING NEED

Most of the national income is derived from the modern farming areas where the top 1% of the population owns 42.6% of the cultivatable land. On the other end of the scale, seventy-eight percent of farmers exploiting 11% of the cultivatable land work farms averaging only 7 hectars in size.

They are reduced to use by primitive agricultural methods and are largely outside the effective range of the economy.

As there is little additional land to be brought into efficient cultivation, agricultural development is expected to remain relatively stable in future years. Marginal improvements may be achieved from programs of crop diversification. This static outlook in agriculture will tend to emphasize and accelerate the present rapid rate of urbanization.

Between 37,000 and 42,000 persons each year are added to urban areas. The rate of growth of the capital is reportedly in the range of 6% per year. Rural areas have increased at about 3% per year in the past decade and this rate is declining. The average size of families of the population is increasing annually. This probably reflects an improvement of health services, but also the worsening housing situation, the subsequent delay in departure of the adolescents and doublings up of related families and individuals.

TABLE 12

AVERAGE FAMILY SIZE

	1950	1961	1969[a]
National Average	5.07	5.46	5.70
Urban Areas	4.77	5.15	5.15
Rural Areas	5.26	5.61	6.10

TABLE 13

URBAN POPULATION IN CITIES OF MORE THAN 5,000 INHABITANTS
(Preliminary Figures of 1971 Census)

National Population	3,533,000	100%
Rural Population	2,137,000	60%
Urban Population	1,396,000	40%
Urban Population of the Eight Largest Towns		% of Urban Population
San Salvador Metropolitan Area (New San Salvador)	564,200	40.4%
Santa Ana	96,300	6.8%
San Miguel	59,300	4.2%
Sonsonate	33,500	2.3%
Usulutan	19,600	1.4%
La Union	17,200	1.2%
Acajutla	8,600	0.6%
La Libertad	8,200	0.5%
Total	806,900	57.4%

Sources: Ministerio de Economia, Direccion General de Estadistica y Censos. Cuatro Censo Nacional de Poblacion 27/VI/71 (Cifros Preliminares).

Statistics of housing need, demand and supply in El Salvador are drawn from an exhaustive report compiled in 1971 by a governmental team of specialists and representatives of the Organization of American States and the United Nations.[1/] The report shows that two-thirds of the population of metropolitan San Salvador live in unsanitary conditions and that 75% of the population have low incomes for housing purposes (less than $100 per month). Fifty-eight percent of the dwellings have one room, and less than half have sewage service. Forty-seven percent of the dwellings are overcrowded

1/ "Diagnostico de la Situacion Habitacional de la Republica de El Salvador, en 1970 - Pronostico y Proyecto de Formulacion de la Politica Nacional Habitacional." Instituto de Viviendo Urbana San Salvador, August 1971.

with more than three persons per room. Twenty percent of the land area of the metropolitan area is occupied by illegal settlements and these settlements are growing by 16% per year versus 3% per year growth of legal standard urbanization. It is projected that in 15 years, 40% to 50% of the urban area may be devoted to illegal settlements.

Table 14 presents the government's estimates of housing need in El Salvador. Urban estimates are based upon the Housing Census of 1961 and rural estimates are from the best available data.

TABLE 14

A. URBAN HOUSING DEFICIT - 1970

1.	Increase in urban population 1969-1970 (Divided by average family size 5.15 persons	39,702
2.	New houses needed for population increase	7,709
3.	(Minus) Houses constructed to standard with permit	-2,634
4.	(Minus) Estimated standard house construction without permit	-1,600
5.	Deficit houses required for population increase less houses built	3,475
6.	Carryover deficit estimates for 1969	143,284
	Total Deficit - 1970	146,759

7. Distribution of the urban housing deficit is as follows:

	%	Dwelling Units
Metropolitan San Salvador	27.4	40,250
Santa Ana	10.6	15,550
San Miguel	10.1	14,800
La Libertad	7.6	11,150
Usulutan	7.1	10,400
Sonsonate	7.0	10,300
La Paz	5.2	765
La Union	5.2	765
Chalatenango	4.4	645
Morazan	3.7	542
Ahuachapan	3.5	515
Cuscatlan	2.9	425
Cabanas	1.7	250

Source: pg. 111, Chart II.5.2 "Situacion de la Vivienda Urbana el ano 1970 en El Salvador" Diagnostico, etc.

TABLE 14

B. RURAL HOUSING DEFICIT - 1970

1.	Rural population (Divided by average rural family size 6.10 persons)	2,124,232
2.	Total number of rural dwellings (1970)	350,000
3.	Estimated 80% are substandard dwellings	280,000
4.	(Minus) 40% of which are estimated to be improvable dwellings	-110,000
5.	60% new rural houses needed	170,000

Sources: Pg. 121 - Sec. II 6. "Deficit Habitacional Rural de El Salvador en 1970" - Diagnostico etc.

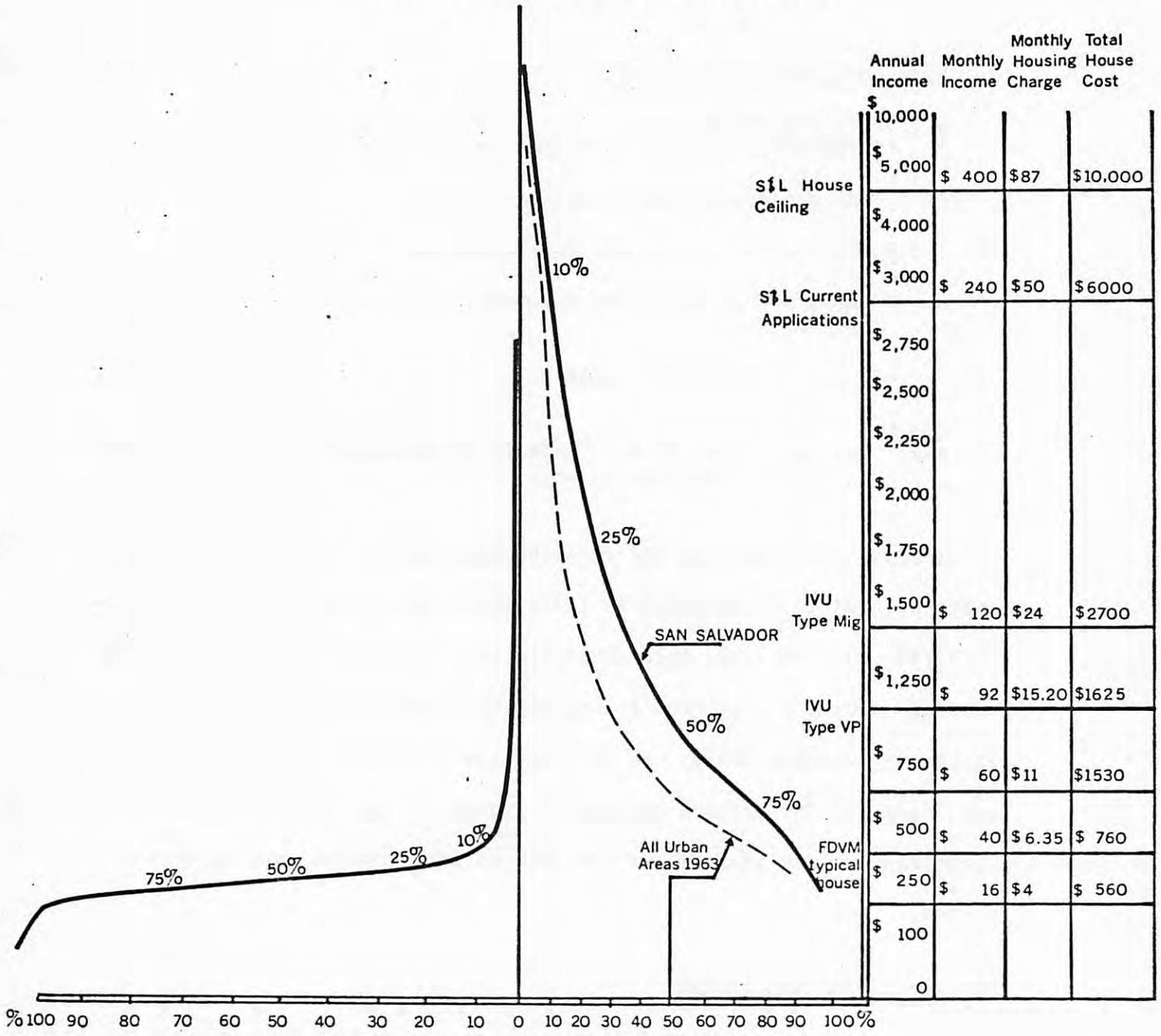
A total urban housing and rural housing deficit of 426,000 dwelling units existed in El Salvador in 1970. The urban component of this total (146,759) does not take into consideration, however, removals from the housing stock and a program to upgrade the current low standard of housing in the major urban areas. By doubling the 12,000 to 14,500 construction need required for natural population growth, it may be possible to substantially reduce the deficit and account for removals over a 30-year period.

HOUSING DEMAND AND INCOME

The average per capita income, as a percentage of gross national product of El Salvador, is $294.00. This also corresponds to the average rural income. The average urban income is about $1,000 a year. Except for Honduras, the income picture is significantly below incomes of adjacent Central American countries and Mexico. Incomes rise very slowly from the minimum level and very sharply at the extreme upper 5%. The poorest 10% of the population, 350,000 persons (61,500 families), earn only about $45 per capita. Average

EL SALVADOR

FAMILY INCOME AND HOUSING



RURAL POPULATION 60%
2137,000·6.10
350,000 families

URBAN POPULATION 40%
1,396,000·5.15
270,000 families

Source: Diagnóstico de la Situación Habitacional de la República de El Salvador en 1970. Table 1-3-9 Pg. 24, Annex "A" Pg. 116, Annex "B" Pg. 117, Annex "C" Pg. 118, Table 1-2-3 Pg. 173, Pg. 145, 146. Instituto de Vivienda Urbana, San Salvador, Agosto de 1971.

daily rural wages have increased only 30 cents in the past nine years from $1.30 to $1.60. Figure 3 shows the national distribution of rural and urban income.

The proportion of expenditure for housing on the average has been reduced due to the greater increase in the cost of food and this change in the distribution of expenses shows how it has affected average urban family budgets.

WORKER FAMILY EXPENDITURES IN URBAN AREAS

	1969	1970
Food	56.4%	57.6%
Housing	16.1%	15.4%
Clothing	9.6%	9.5%
Miscellaneous	17.9%	17.5%

Table 15 presents the government's estimate of the demand for urban housing in El Salvador.

TABLE 15A

URBAN HOUSING DEMAND BY INCOME GROUPS

	Monthly Family Income	% of Families	Deficit Family Income 1961-1972	Less Built Houses 1961-72	1970 Resulting Deficit	% of Deficit 1970 - Demand	
Marginal and Subsistence Income	$0-$40	17.0%	31,071	1,259	29,812	20.3	Mod. High
Low Income	$40-$100	40.5	74,000	6,079	67,921	46.3	High
Middle Income	$100-$240	27.5	50,283	14,691	35,592	24.3	Mod. High
High Middle Income	$250-$240	5.0	9,139	6,278	2,861	1.9	None
High Income	Over $400	10.0	18,277	7,704	10,573	7.2	Slight
TOTAL		100.0%	182,700	36,011	146,759	100.0%	

TABLE 15B

REPAYMENT CAPACITY OF FAMILIES FOR HOUSING IN URBAN AREAS OF EL SALVADOR

	Monthly Family Income	% of Population	Monthly Payment Capacity	% of Income	Corresponding House Value	
Subsistence Income	$0-$16	5.0%	$4.00	25.0%	$ 560	
Marginal Income	$16-$40	12.0	6.35	16.0	750[1/]	
Low Income	$40-$60	13.0	11.00	18.0	1,530[1/]	
	-$92	27.5	15.20 (IVU type VP)	16.5	1,625	) Current IVU) Govt. Housing) Program
	-$120	8.5	24.00 (IVU type M-16)	20.0	2,700	
Middle Income	$120-$240	19.0	50.00	21.0	6,000[2/]	) Savings) and
High Middle Income	$240-$400	5.0	87.00	22.0	10,000[2/]	) Loan) Program
High Income	$400	10.0			10,000 up[3/]	

1/ Based on calculation of 6% interest, 20-year term, 10% down payment.

2/ Based on calculation of 9% interest.

3/ Based on calculation of 30% down payment.

Table 15A shows that a deficit of 67,921 urban houses exists for the low income group earning from $40-$100 per month. We may estimate that 1 1/3 of this deficit pertains to the $40-$60 per month income group identified with a house costing $1,530 (Table 15B). The deficit, therefore, for this income group is 22,000 units. We may estimate that at least one-third of the families shown in the marginal and subsistance income category may be able to afford as much as $6.35 per month for new housing. This results in a total effective demand for minimum shelter at 32,000 units.

Table 15A indicates that the marginal and low income population earning between $16 and $60 per month comprise 25% of the population. In Table 14 it is shown that the urban population is increasing by 7,709 families per year. Annual demand for minimum shelter in El Salvador equals a need for 1,900 new units annually of which 40% should be built in the capital.

Virtually 90% of the rural population falls within the marginal and low income categories. In the absence of more specific data, we may conclude that 90% of the 170,000 rural housing deficit, or 153,000 units, comprises the effective demand for new housing.

THE ROLE OF PUBLIC INSTITUTIONS

IVU

The Instituto de Vivienda Urbana (IVU) was established in 1951 and functioned until recently as an antonomous agency under the Ministry of Public Works. As a result of serious problems of coordination with other agencies concerned with public utilities and services, the planning function of IVU was assumed by the Presidency as an activity of National Planning and Economic Coordination Council (CONAPLAN).

IVU

IVU is authorized to build housing in urban areas for citizens earning no more than $128 per month, which under current mortgage practices of the Institute corresponds to a dwelling with a sales price of about $3,000. Table 16 shows that in recent years the average dwelling built by IVU has been valued at close to the upper extreme of this limit. The volume of construction in the past four years has been about 1,000 units per year of which 80% were built in the capital.

TABLE 16

A. VOLUME AND UNIT VALUE OF IVU CONSTRUCTION

Year	Average Unit Value	Number of Units Constructed
1960	$3,940	324
1961	3,660	540
1962	3,620	500
1963	2,000	1,820
1964	1,930	460
1965	2,660	1,876
1966	3,580	1,466
1967	2,810	864
1968	2,590	1,426
1969	2,060	1,391
1970	2,250	1,034
1971	2,720	208

B. HOUSING TYPE AND LOCATION OF IVU CONSTRUCTION BY CITY (1972)

	Apartments	Houses	Total	%
San Salvador	6,544	8,831	15,375	80.0%
Santa Ana	64	835	899	4.6%
La Libertad		1,011	1,011	5.2%
Sonsonate		829	829	
San Miguel		640	640	
Usulutan		249	249	
La Paz		96	96	
San Vicente		55	55	
Chalanenango		46	46	
Altaachapan		45	45	
La Union		20	29	
Percent of Total	35%	65%		

Rising construction costs and high development standards have severely strained IVU's ability to build housing and market the dwellings to qualified families under the statutory maximum income limits. At the time of the writing of the government's national housing study in 1971, one thousand recently completed units in the capital were vacant. High down payment requirements were given as the reason for the failure of the sales program.

One serious problem obstructing greater reinvestment of the government in housing and the public image of the national shelter program is the poor management and high payment delinquency record of past IVU projects.

Table 17 shows that the overall recuperation rate is 91.44% delinquent for a value of about $500,000, spread among 13,643 families. The majority of these delinquencies are found in the two IDB assisted programs. (8,341 out of a total 8,986 participants.)

TABLE 17

GENERAL SITUATION OF DELINQUENCY

FOR IVU PROGRAMS AS OF 30 APRIL 1972

Months of Delinquency	ID Programs 1	2	Lease Purchase	Reinvestment	Rental	Land Sales	Total
1	20.3%	18.7%	22.9%	36.5%	24.1%	25.0%	21.8%
2	26.9%	24.4%	29.9%	18.3%	32.1%	26.8%	27.1%
3	16.3%	18.3%	17.4%	9.0%	15.0%	11.0%	16.4%
4-6	17.5%	18.8%	10.8%	14.4%	13.7%	12.1%	15.8%
7-12	8.5%	9.1%	4.6%	7.8%	6.9%	5.0%	7.6%
12-24	1.9%	3.6%	1.6%	1.5%	1.9%	4.2%	2.3%
24 Plus	.4%	1.2%	.2%	-	.3%	1.1%	.5%
	91.9%	94.0%	87.3%	87.5%	94.0%	85.3%	91.4%

TABLE 17 CONTINUED

CURRENT PORTFOLIO FOR COLLECTION

Program	Units	Total
IDB-IVU		
27 TF/ES	4,929	
108 TF/ES	5,057	8,986
Regular		
Lease Purchase	2,951	
From Reinvestment	666	
Rental	1,936	
Land Sales	380	5,933
	Total	14,919

The Institute has relied substantially, in recent years, upon foreign loans. About 40% of its funding from 1962 to 1970 has come from these sources. The share of the government's contribution declined from $920,000 between 1962 and 1964 to $200,000 between 1968 and 1970, or about 25% of the Institute's budget. Another 25% of reinvestment funds came from the recuperations.

ICR

Together with the creation of IVU for housing in urban areas, the Government of El Salvador created, in 1950, the Instituto de Colonization Rural for the exploitation and resettlement of national rural land. From 1962 to 1972, about 295 houses were built -- over 90% of these in the year 1966.

Cost of the units varied between $1,600 and $5,800. Funding for the housing aspect of the I.C.R. program was terminated in 1969.

FOCCO

At present, the Fomento de Cooperacion Comunal (FOCCO), a governmental, rural, public works agency, is developing plans to construct 200 rural dwellings in 1972 in conjunction with IVU. The program is intended as an experiment to test the capability of the organization in this program and the coordination

procedures with IVU for collection and administration following termination of the construction. Ultimately FOCCO expects to build 400 dwellings per year by self-help methods with loans of a value of $120 to $160 at terms of 20 years and 4% to 5% interest.

Banco Hipotecario

The Banco Hipotecario is primarily devoted to agricultural lending; however, they have made occasional loans for housing purposes, a total of 46 loans since 1958 of an average value of $6,250.

CONAPLAN

President Molina of El Salvador has made known his desire to place the priority of his administration upon the improvement of health and housing services. CONAPLAN, the national planning agency, has prepared two alternative five-year housing proposals for the consideration of the new administration, one of which contemplates the construction of 3,700 units and the second, 8,400 units per year. Each alternative proposal will concentrate the government's efforts, for the first time, on resolving the problem of subsistence, marginal and low income citizens.

THE ROLE OF PRIVATE INSTITUTIONS

Savings and Loan Institutions

The savings and loan system plays an important role in expanding house building activities for the benefit of the middle income urban population. Three stock companies and the government agency, the Financiara Nacional de Vivienda (FNV) make up the system. Limits for lending have been established to assure that housing costing no more than $10,000 is assisted and that interest rates raise no higher than 9%.

Savings and loan institutions have had modest, but steady growth in savings since 1963, although in the past two years the number of new dwellings which have been financed has declined from the high of 800 units in 1969. This is due to a saturation of the housing market at the $8,000 to $10,000 level. Current builders' requests for financing are at the $6,400 to $7,200 units cost range. The FNV reportedly has a substantial surplus of funds for relending to participant institutions.

Loans for home improvements are a greatly underdeveloped activity. The largest saving and loan institution has approved one loan in its seven-year history.

CONVENTIONAL FINANCE INSTITUTIONS

Private commercial banks and insurance companies have made loans for higher cost housing at 12% interest with between 10% to 40% down payment required. The volume of these loans is reported to be very low.

There is reportedly a small need for additional housing finance facilities for houses costing more than $10,000 due to limited funds of conventional financial institutions.

Fundacion de Desarrollo y Vivienda Minima (FDVM)

The FDVM is a private nonprofit organization founded in 1968 to assist the slum settlers of San Salvador in finding shelter in the aftermath of a period of heavy rains and flooding. The Foundation has a staff of 13 persons and had completed a total of 128 units by the close of 1971.

The unique aspect of the program is that dwelling costs for units produced by the Foundation average only $800 including land and services. An excellent social relations program has assured a high degree of self-help

construction participation by beneficiaries and complete absence of repayment delinquency. Monthly payments range from $4 to $10 as shown in Table 18.

TABLE 18

REPAYMENT TERMS FOR PROJECTS OF THE FUNDACION DE DESARROLLO Y VIVIENDA MINIMA

	Project No. 1	Project No. 2	Project No. 3
Number of Units	33	33	62
Loan Amount	$640	$800	$600
Interest	-0-	5%	(Undetermined)
Terms	80-160 mos.	15 yrs.	15 yrs.
Monthly Payment	$4 - $8	$6 - $10	$4.80 (Average)

The Foundation functions with donations and loans from the Government, USAID, the Panamerican Development Foundation, the Inter-American Foundation and private individuals. Its objective during 1972 is to produce 1,500 dwellings, together with a variety of projects to socially and economically improve community life. Three production cooperatives are in formation to produce crafts and building materials and to provide jobs for more than 50 persons.

Cooperatives

There are currently 151 cooperative associations and a federation of credit unions under the general supervision of the Cooperative Development and Promotion Institute (INSAFOCOOP). No housing cooperatives are among this group, though occasional and unsuccessful efforts to secure financing for a cooperative housing activity have been made.

Housing cooperatives are contemplated under the 1970 Cooperative Law and there are no obstacles in the law to cooperative ownership and management of housing. The only current plan to produce housing is the construction of 200

rural dwellings, incidental to the participation of the Federation of Credit Unions in a project with the Rural Colonization Institute, I.C.R.

HOUSING SUPPLY

The average construction achievement of the public and private organizations involved in housing over the past several years is shown below:

TABLE 19

AVERAGE HOUSE BUILDING ACTIVITY OF THE BUILDING INDUSTRY PER YEAR

FOR THE PERIOD 1968 - 1970

Housing Development Resources	Number of Dwellings
Traditional Lending Sources	1000
Savings and Loan Associations	700
Cooperative and Non-Profit Associations	33
Institute de Vivienda Urbana (IVU)	1250
Instituto de Colonizacion Rural (ICR)	30
	3013 dwellings

We may assume that an additional 17,000 to 18,000 new urban families in El Salvador each year are living in new or used housing more or less in a general state of deficiency.

Note in Table 20 that despite large gains in the economy in the past decade there has been only marginal advance in the volume of construction. The housing industry has generally been of minimal importance in the economy. Production has seldom exceeded 1.5 units per thousand population.

TABLE 20

URBAN PRIVATE HOUSE CONSTRUCTION

FOR WHICH A PERMIT IS ISSUED

Year	Financed under Savings and Loan System	Average Unit Value	Total Average Unit Value	All Private Construction Total
1956			$9,150	488
1957			9,000	942
1958			6,150	866
1959			7,250	818
1960			8,150	996
1961			7,700	1,027
1962			7,600	699
1963			-	898
1964	Initiation of Activities		-	1,058
1965	429	$9,240	-	1,039
1966	516	8,860	-	1,816
1967	346	9,500	-	2,141
1968	445	9,700	-	1,552
1969	803	9,360	-	1,784
1970	649	9,050	10,670	1,600

The date of average dwelling cost on Table 20 indicates that the known information on private house building activity is limited to the construction for the benefit of the upper 5% to 10% of the urban population.

STANDARDS FOR DEVELOPMENT OF HOUSING COSTING $1,500

Aside from an experimental 100 lot site and service project begun in 1970

foundations such as the FDVM and cooperatives which borrow from the mutual savings institutions to build housing. Banking on the cooperative basis has been very successful in Colombia, for example, and is the primary source for construction capital of nonprofit and cooperative organizations in that country. A similar program has begun in Honduras. Brazil has a very successful system of using deposits from social security deductions for cooperative housing.

The current market interest rate paid on savings is 6% and the market ceiling for interest on mortgages is 9%. A concessional loan made to the FNV at 2-3/4% may be relent to mutual savings institutions at 3-3/4%. The margin between 3-3/4% and the interest rate to be charged on mortgages may initially capitalize the savings institutions. Current interest rates charged by the FDVM and IVU are 5% for 15 years and 6% for 20 years, respectively. These rates equal $7.91 and $7.71 per month for a house costing $1,000. Increased cost to the beneficiary of a market rate mortgage of 9% for 20 years is $1.20 per month. A mortgage interest rate of between five and nine percent will be used. To the basic rate a small surcharge of between four and eight percent must be added to cover costs of insurance and administration which were formerly subsidized by the government or by donations from private philanthropies, or ignored as risks.

A summary of functions of a mutual savings institution for low-cost housing could be as follows:

a) to provide short term construction funds;

b) to provide development capital to nonprofit sponsors of lowest-cost housing;

c) to invest in mortgages of nonprofit developers of lowest-cost housing;

Recommendation No. 2

AID should make a concessional loan of $2 million to the Financiera Nacional de la Vivienda (FNV) for relending to mutual savings institutions to be created. The purpose of the mutual savings institutions would be to make loans for home improvement, community service projects of cooperatives and the construction of low-cost cooperative housing.

Because of special urbanization standards of El Salvador, only nonprofit developers, cooperatives or mutual societies will be eligible for loans. Mutual savings institutions for low-cost housing will provide continuity of investment and self-generating resources for the improvement of housing costing less than $1,500, and stimulation of a variety of alternative private institutions to supplement the government's efforts in low-cost housing. One major borrower from a mutual savings institution would be the FDVM, which has achieved an unblemished collection record among beneficiaries of housing costing less than $1,000.

The FNV, a government regulating and lending agency for savings and loan institutions, is seeking ways to assist in the Government's plans for lowest-cost housing. It is unlikely that the FNV can induce the nation's stock ownership savings and loan institutions which are currently meeting the middle income housing needs of their savers, to invest substantially in lowest-cost housing.

It is anticipated that the financial structure of mutual savings institutions for lowest-cost housing will be significantly different from that of savings and loan associations in the country. Though it should accept individual savings to assure constituency control of low income families, free savings are likely to be of minor importance in volume. The basic recapitalization mechanism for such mutual savings institutions would probably be derived from the use of reserve deposits and share capital of nonprofit institutions and

RECOMMENDATIONS

It is proposed that concessional loans and grants totaling $2,100,000 be made available for low-cost housing for the following programs:

Recommendation No. 1

The National Housing Institute, IVU, should initiate a program to reduce collection delinquency by improving the internal records ststem, strengthening eviction policy and organizing or reorganizing community associations. Cooperatives should be established to manage and eventually own the 15% of the public dwelling stock which is currently rented. Strong leadership among residents should be encouraged to mobilize self-help resources, foster neighborhood identity and mutual integrity for the reduction of debt delinquency. The program would demonstrate the commitment of the government to make maximum use of local resources for reinvestment in lowest-cost housing.

The experience of FCH working with the national housing agency in Panama shows that the cycle of delinquency can be broken with a strong program of employee training, proper applicant screening procedures, resident training in their obligations and improved billing and record keeping methods. Results of the FCH program after one year are shown below.

TABLE 23

TWELVE MONTH COMPARISON. BORROWERS IN ARREARS BY CATEGORY

Date	Total Number of Borrowers	No. up to date	o/o up to date	Months in Arrears 1-3	4-6	7 & more
31 Jan. 71	8,919	749	8%	4,516	1,578	2,076
31 Jan. 72	10,747	4,852	45%	2,990	999	1,906

A summary of home loan and mortgage terms is shown in Table 22.

TABLE 22

SUMMARY OF LOAN TERMS FOR HOUSING IN EL SALVADOR

Institution	Interest	Term	Down Payment	Maximum Unit Value
Fundacion de Desarrollo y Vivienda Minima	5%	15 yrs.	17%	$1,000 self-help
Government Loans				
ICR	3%	20 yrs.	-	
IVU	6%	20 yrs.	10%	Regular Government Program, $2,562 IDB Assisted Program
Savings and Loan Institutions	9%	15 yrs.	14%	$10,000
Banco Hipotecario	9%	10 yrs.	30%-50%	Above $10,000
		15 yrs.		Not in use
Insurance Companies	12%	10 yrs.	10%	$10,000
	12%	10 yrs.	20%	$10,000 - $20,000
	12%	10 yrs.	40%	Above $20,000

d) to resell mortgages to the FNV;

e) to borrow funds from the FNV;

f) to insure savings of individual depositers;

g) to receive share capital and a fixed percent of reserve deposits of member nonprofit institutions;

h) to insure reserve deposits;

i) to insure share capital of member nonprofit institutions;

j) to sponsor training in housing management and community development in low income communities.

Suggested total AID funding to assist in the provision of lowest-cost housing in El Salvador is $2,100,000 divided as follows:

1. Technical Assistance Grant - $100,000

   a) to advise the National Urban Housing Institute (IVU) on means to reduce collection delinquency and develop cooperative housing programs.

   b) To advise the Financiers Nacional de la Vivienda (FNV) on the means to implement a mutual savings institution loan program through nonprofit sponsors and cooperatives.

2. Capital Assistance Loan - $2,000,000

   To: Financiers Nacional de la Vivienda (FNV)

   Purpose: To create specialized mutual savings institutions as a self-financing resource and to stimulate growth of non-profit agencies for the construction of lowest-cost housing, home improvement, and the development of community services.

   Terms: 2-3/4% for 40 years with the full faith and credit of the Government of El Salvador or the FNV.

VI. LOW-COST HOUSING IN BRITISH HONDURAS

BACKGROUND

British Honduras is a self-governing colony of the United Kingdom. It is a country of some 8,900 square miles, making it approximately the size of the State of Massachusetts. The topography of most of the country is flat. Some 50 miles from the sea at the new capital, Belmopan, the elevation is only 200 feet above sea level. A sub-tropical forest and savannah climate predominates. Hurricane Hattie leveled Belize City with floods and winds in November 1961. The need for reconstruction after this disaster also stimulated the government to build a new capital as a growth center for interior national development and a shelter for vital services from future natural disasters. In addition, a variety of new institutions were created to foster national growth.

The government's budget for 1971 was $20 million, of which $8.95 million was allocated for capital expenditures. $69,000 was planned for low-cost housing and slum clearance, principally in Belize City and $55,000 was planned for the purchase and improvement of land for housing also in Belize City.

HOUSING NEED

Agriculture is the chief economic activity of British Honduras; however, only about five percent of the arable land is under cultivation. New sugar plantation farming in the northern districts of Orange Walk and Corozal have made these areas the fastest growing regions of the country (6.3% and 5.7% per year).

Preliminary date of the census made in 1970 revealed that British Honduras had a population of 119,645 persons, of which about one-third live in the major port town of Belize City. Total population growth in the ten years between the census of 1960 and 1970 was 29,524 persons, corresponding to an annual growth rate of 3.28%. The exceptional growth of the northern agricultural districts has been mentioned. Perhaps because of the effects of the 1961 hurricane, Belize City grew at a slower rate than the national average (2.01%). The slowest growth, at 1.7%, occurred in the southern districts among the isolated and predominatly indigenous Indian population.

About fifty percent of the population live in seven major towns with a population of 2,000 inhabitants or more. The eighth town is the new capital, Belmopan, with nearly 2,000 people in residence during the weekly work day. Table 24 shows the preliminary results of the 1970 census and projections of the urban population adjusted to 1967 estimates.

Approximately 50% of the population live in towns with an average density of 5.8 inhabitants per family and per dwelling unit. Applying this information to the annual national population growth rate of 3.28% and the accumulation of 29,524 inhabitants over the past ten years, about 2,550 new urban families have been added during this period, or 255 families per year. Two hundred fifty-five families were also added in rural areas per year.

TABLE 24

PRELIMINARY SUMMARY OF THE RESULTS OF THE 1970 CENSUS

AND PROJECTIONS BASED ON DATA GATHERED IN 1960 AND 1967

	District Total (1970)	%	Urban Population (based on 1967 Projections)	Number of Urban Houses (based on 1967 Census)	Persons per Dwelling (1960)
Belize City		33.0%	39,257 (1970)	5,400	7.5
Belize Rural	(10,358)	8.7%			
Belize District (Total)	49,615	41.7%			
Corozal City Corozal District	15,403	12.8%	5,000 (est.)	1,000	5.0
Orange Walk City Orange Walk District	16,638	13.8%	2,050 (est.)	500	4.5
Stann Creek City Stann Creek District	13,012	11.0%	5,200 (est.)	1,350	4.0
Punta Gorda City Toledo District	8,954	7.5%	2,000 (est.)	535	3.7
San Ignacio Cayo District	16,023	13.2%	2,600 (est.)	505	5.0
Benque Viejo City			3,000 (est.)	560	5.3
TOTAL	119,645	100%	59,057 (est.)	9,840 units	

FIGURE 4

BRITISH HONDURAS

FAMILY INCOME AND HOUSING (1965)

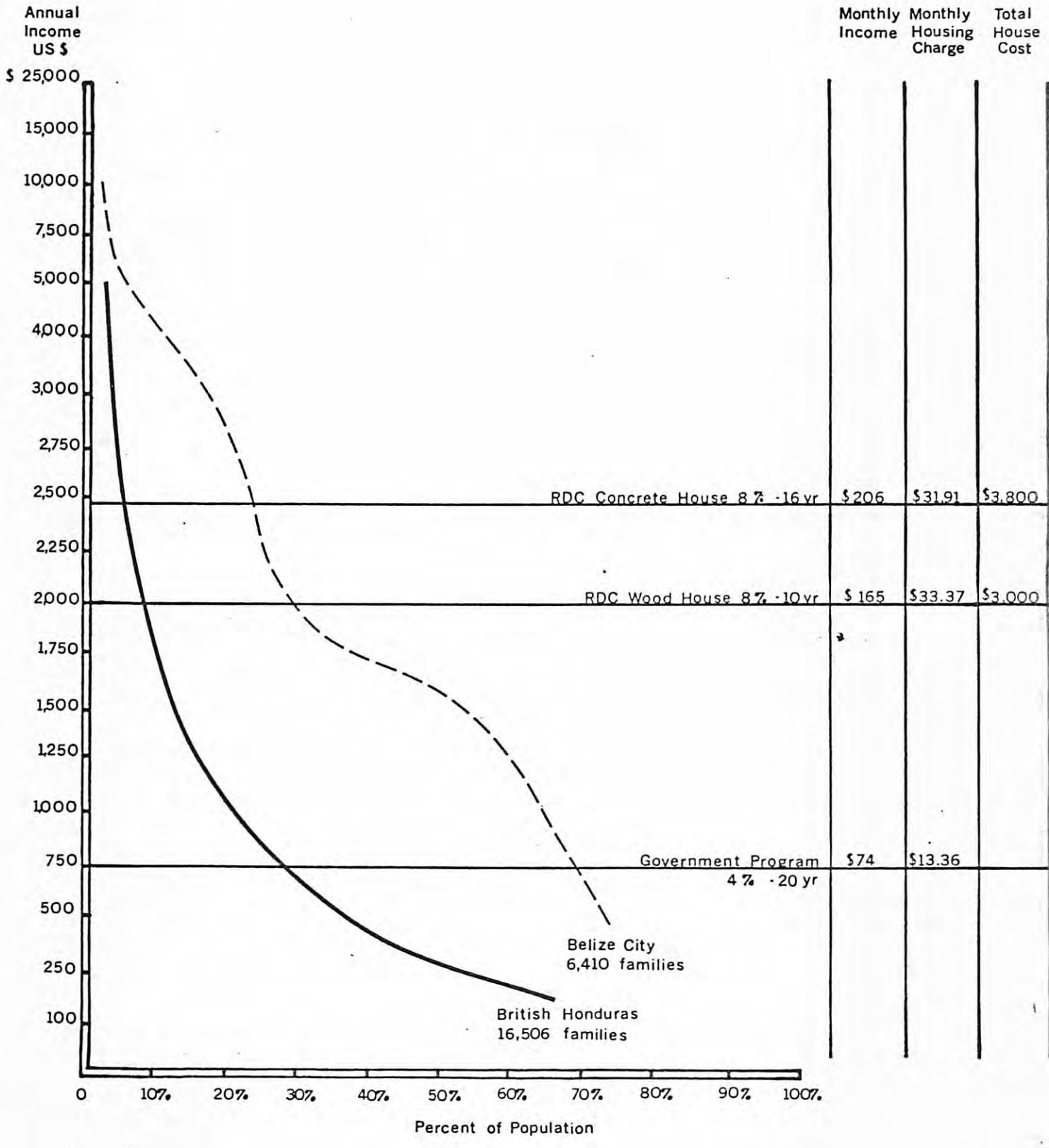


Table 25 also shows the projection of this population each year according to the growth rates of the last decade.

TABLE 25

POPULATION PROJECTION PER YEAR

BASED ON 1960-1970 STATISTICS

	Growth Rate	Population	1970 Number of Dwelling Units	Estimated Families Urban	Estimated Families Rural	Total
Belize City	2.01%	39,257	5,400	110		
Belize Rural	4.31%	10,358	1,010		46	
District	2.43%	49,615	6,410			156
Corozal City			1,000	57		
Corozal Rural			1,480		80	
District	5.73%	15,403	2,480			137
Orange Walk City			500	31		
Orange Walk Rural			1,205		75	
District	6.23%	16,638	1,705			106
Stann Creek City			1,350	27		
Stann Creek Rural			326		7	
District	2.02%	13,012	1,676			34
Punta Gorda			535	9		
Toledo Rural			972		17	
District	1.72%	8,954	1,507			26
San Ignacio			505	19		
Benque Viejo			560	21		
Belmopan			500	19		
Cayo Rural			1,163		43	
District	3.72%	16,023	2,728			102
Nation	3.28%			293	268	561

The "National Housing Survey," prepared by the Ministry of Education, Housing and Labor and published in August of 1970 revealed that, from an environmental and structural point of view, 56% of the housing in Belize City was of poor quality and an additional 35% was of questionable or marginal quality. Only nine percent of the current housing stock was evaluated as acceptable. Other major towns of the country had housing stocks of either marginal or acceptable quality. Based upon the date of Table 25 it appears that 2,500 dwellings in Belize City should be replaced or improved to acceptable quality. Spread over a ten-year period, this implies that 250 new dwellings should be built or home improvement loans be made in Belize City per year.

Housing conditions revealed by the survey are shown in Table 2 .

TABLE 26

HOUSING CONDITIONS IN BELIZE CITY (1970)

	Occupant Density per Unit	Yard Space per Unit sq. ft.	Floor Space per Person sq. ft.	Average Unit Size sq. ft.	Monthly Charge	Monthly Charge per sq. ft.
Kings Park (adequate mid income suburb)	6.0	2589	108	629	$18.50	2.95¢
Fort George (marginal old mid income)	5.5	1032	111	609	37.40	6.15¢
Albert Road (marginal mid income)	5.6	297	99	527	26.40	5.00¢
Queen Square (marginal mid income)	6.5	1263	59	386	16.10	4.17¢
Lake Independence (substandard low income)	6.5	1542	56	368	13.20	3.60¢
New Road (substandard low income)	5.4	335	80	425	19.40	4.57¢
Ex Service Mans. (substandard low income	5.9	1147	64	371	15.00	4.05¢
Mesopotamia (substandard low income)	5.3	246	66	351	15.00	4.28
	avg. 5.8 persons/unit					

HOUSING DEMAND

The average per capita income in British Honduras in the year 1964 was $360 and this level of wealth has reportedly declined slightly in recent years due to lower commodity markets for agricultural exports.

Table 27 shows that 60% or more of the economically active population resides in Belize City and that the city population dominates the Belize district by 4:1. As a result, we may conclude that the average income for Belize City is between $1,000 and $1,500 per year.

In contrast, though the Toledo District in the south has nearly 9% of the estimated number of families in the nation, it has only 1.5% of the wealth. Though the Western District of Cayo has over 16% of the estimated families, only 7% of the wealth is enjoyed in this region.

Figure shows the distribution of family income for Belize City and the nation.

DISTRIBUTION OF PRIVATE INCOME - BEFORE TAX

1965 Income U.S. Dollars	Belize	%	South District Stan Creek	South District Toledo	North District Orange Walk	North District Corozal	West District Cayo	1965 All Districts	1967 All Districts
Under $460	1,800 est.	28%	850 est.	1,400 est.	1,266 est.	1,700 est.	2,200 est.	9216 est.	10,500 est.
$460-689	897	14%	307	35	107	176	190	1712	1,357
$690-1347	1,985	31%	331	41	227	332	205	3121	3,287
$1375-2029	817	12.8%	86	17	50	139	75	1184	1,179
$2030-3419	528	8.2%	55	10	19	85	40	737	844
$3420-5149	237	3.7%	31	1	17	29	10	325	
$5150-6899	78	1.2%	7	3	12	9	6	115	
Over $6,899	68	1%	9		7	10	2	96	464
$6,900-10,299									97
$10,390-17,199									30
Over 17,200									5
1) TOTAL of economically active families	4,610		826	107	439	780	528	7290	7,263
2) % of economically active wage earners by District	63%		11%	1.5%	6%	11%	7.2%	100%	
			Total 12.5%		Total 17%				
3) Total of all families	6,410		1,676	1,507	1,705	2,480	2,728	16,506	
4) % Total families by District	38%		10%	9%	10%	15%	16.5%	100%	
			Total 19%		Total 25%				

Housing Demand by Income Group

Figure 4 shows the national income for 1965 in graphic form. While living costs and related incomes have increased an estimated 5% to 7% per year as a result of world wide inflation tendencies, the purpose of the graph is not lost due to the shift. Figure 4 shows that current popular mortgage programs are available for the top twenty-five percent of the population having incomes greater than $880 per month. In addition we know that housing programs for families earning as little as $500 per month are possible in neighboring Guatemala, which if applied to British Honduras would assure housing for slightly more than forty percent of the population.

Table 28 shows the annual growth due to population increase in nine major income groups. In addition, it is recognized that there is a need to replace 2,500 substandard dwellings in Belize City at a rate of 250 units per year in ten years. Poor housing is largely a phenomena of low incomes and replacement may require some subsidy. The distribution of proposed new construction is confined to families earning less than $2,000/per year.

TABLE 28

HOUSING MARKET BY INCOME LEVEL

Annual Income	% of Total Families in B.H.	No. of Families by Income for Effective Market Demand	New Families at 3.8%/yr. National Average	Replacement of 2500 Units in 10 years	Total Effective Demand per Year Urban and Rural
1) $500-$749	11.0%	1,800	68	85	153
2) $750-$999	8.0%	1,300	50	70	120
3) $1000-$1249	5.0%	800	30	46	76
4) $1250-$1499	4.0%	650	25	35	60
5) $1500-$1749	2.5%	150	6	14	20
6) $1750-$1999	2.0%	120	5	10	15
7) $2000-$2499	3.0%	180	7		7
8) $2500-$5000	2.5%	150	6		6
9) $5000-$25,000	1.0%	60	2		2
	39.0%		199	250/yr. in Belize City only	459

THE ROLE OF PUBLIC INSTITUTIONS

The Reconstruction Development Corporation

The RDC was established immediately after the 1961 hurricane with a loan from the British Treasury of $7,750,000.00. It has subsequently become the major supplier of mortgage funds for housing in the country. Currently about $2,050,000 is invested in one thousand or more housing loans of an average value of $2,070. The mortgage delinquency rate at the close of 1970 was slightly in excess of thirteen percent for a value of $272,000. At present, eighteen mortgages are undergoing foreclosure proceedings in Belize City.

Funds for new mortgage lending have recently become exhausted. In 1969 the program was expanded by means of a $690,000 commercial bank loan at 7% for 16 years. A 50% collateral of RDC reserve deposits and a government guaranty were required. More than 350 loans were made in the subsequent 3-1/2 year period, or about 100 loans per year. In contemplating extension of this program without further capitalization, only about 17 loans at the average value may be made per year. This would be based on the annual accumulation of about $17,000 in reserves by the RDC for deposit. The RDC has made a request for $2 million from the Commonwealth Development Corporation to continue its lending program; however, to date the request has not met with success due to limited funds in the CDC. Three hundred seventeen applications remain for mortgage loans at the close of the program.

Mortgage loans from the Reconstruction Development Corporation provide for draw-downs of funds based on construction progress and following installation down payment of at least 10% of construction value. In this way mortgage loans achieve a 90% loan to value ratio. Interest is at eight percent. Terms and maximum value of the mortgage loan vary with the basic house materials to be used.

Wood houses are eligible for a maximum $3,000 loan over a 10-year term. Minimum annual income required for an applicant is about $2,500.

Concrete houses are eligible for a maximum $3,800 loan over a 16-year term. Minimum annual income required for an applicant is about $2,500.

The Corporation favors increasing the loan ceiling for concrete houses to $6,900 and de-emphasizing loans for wood-house construction.

Mortgage loans by the RDC are awarded for housing to be built upon land leased from the government. Collateral is not required. Applications are approved based upon character and a minimum income sufficient to yield $10.50 per $1,000 within a 25% range of the applicant's monthly income.

National Housing and Planning Department

Since 1962 the Government of British Honduras has provided loan funds and staff support for the construction of 220 houses by the Housing and Planning Department of the Ministry of Education, Housing and Labor. All of the houses have been constructed in Belize City with the exception of eight units built in the town of Hattieville. About 30 units are built each year with the department's construction crew of 22 workmen. Twenty units are planned for future construction in Hattieville.

The typical dwelling constructed by the Department consists of four rooms and 480 square feet. Soil-cement blocks produced with the "CINVA-RAM" machine make up the walls. Floors are elevated and are of wood construction as are the doors and window sash. The roof is corrugated, galvanized steel. Basic cost for this dwelling is $1,510.00. Dwellings are built on lots provided by lease from the Ministry of Agriculture Lands and Cooperatives.

Of the 220 units built by the Department, 128 (58%) were awarded to recipients on a rental basis at rates ranging from $15.00 to $18.00 per month.

Subsequently a program of lease hold with option to purchase was initiated. Terms of the purchase contract stipulate a 4% interest rate on the government's investment for a 20-year term. Monthly payments including taxes and insurance are $12.50 plus 86¢ for the annual lot lease. Purchasing of the lot may begin only after completion of the purchase of the dwelling. Currently the government is investigating means to make purchasing of the dwelling and lot concurrent.

The Department estimates that twelve foreclosures have been enforced due to delinquency in payment of rent or mortgages in the past ten years and a waiting list of over 800 applicants is on file for future construction Maximum annual income of qualifying families for the government's housing program is $880.00.

The only formal loan program for home improvement was carried out by the Ministry of Education, Housing and Labor following the 1961 hurricane. In this program seventy loans were made for a maximum value of $1,000. Interest was 4% with varying terms of maturity.

Ministry of Agriculture Lands and Cooperatives

Land development activities for low and moderate income urban housing is dominated by the Department of Lands and Survey of the Ministry of Agriculture, Lands and Cooperatives. Building lots are made available by land fill in one major site in Belize City. The average size lot provided for low-cost housing is 4,000 square feet in area. Water, electricity, and gravel road access is provided. Sanitary disposal is by septic tanks. Cost of this lot is $290.00 with purchase terms of 7% interest for 20 years. The monthly charge is about $2.25. Building lots, as mentioned previously, may be leased for 25 years at a charge of $10.40 per year or 86¢ per month. The Department currently has

on file about 300 applications for the 140 lots to be awarded in 1972.

Formerly no proof of financial worth was required to receive a lot award from the government. Many lots remained vacant as a result due to the inability of citizens to build upon the lot awarded to them. At present the Department of Lands requires either a letter of credit from a bank or a commitment for a mortgage loan from the Reconstruction Development Corporation before an award will be made. Arrangements with the Reconstruction Development Corporation to implement this policy have not been completed to date, however.

Applications for Assistance

Several government agencies accept applications for housing assistance, and the ruling Peoples Union Party through its "Woman's Housing Group" actively lobbys and promotes savings for more housing assistance. The Reconstruction Development Corporation holds applications for mortgage loans in excess of three times the average 100 loans which the corporation approves per year in the $2,000 U.S. to $4,000 U.S. unit value range.

TABLE 29

APPLICATIONS OF THE RECONSTRUCTION DEVELOPMENT CORPORATION

District	Number	% of Total	Average Value	% of Total Value
Belize City	73	33%	$2,550 U.S.	48.0%
Belize Rural	15	7%	$1,450	5.6%
Northern District	54	25%	$1,500	21.0%
Western District	33	15%	$1,350	11.4%
Southern District	40	18%	$1,450	14.0%
	217			
	+100	applications pending for various reasons		
	317	total		

In addition, the Housing and Planning Department of the Ministry of Education, Housing and Labor has a waiting list of 800 families for houses costing $1,500 built by the Department. The Department of Lands and Survey of the Ministry of Agriculture, Lands and Cooperatives has filed over 300 applications for the 140 lots which it will sell and rent in 1972 with an average value of $300.00.

An unfilled expressed demand for from 300 to 800 units exists in Belize City alone, and based on applications to the Reconstruction Development Corporation, this demand may be only about half of the urban and rural housing demand for the country as a whole.

THE ROLE OF PRIVATE INSTITUTIONS

Commercial Banks

No specialized system exists in British Honduras among private banking institutions for mortgage lending. The three major banks (subsidiaries of Canadian or British banks) each hold between six and ten house mortgages in the form of personal loans to its prime customers. Loans are at 10% interest with a 60% to 70% loan to value ratio for terms varying between 5 to 7 years. Value of the mortgages are in the $20,000 to $30,000 range. One bank reported that it does not have sufficient local deposits for long-term lending purposes and therefore must request home office approval for loans of more than two-year terms. Several banks have recently reached agreement with local insurance companies for the sale of mortgages as a means to expand the volume of funds available for relending. It is estimated that in the immediate future this program would only provide for approval of between 15 and 30 high value mortgages per year.

Holy Redeemer Credit Union

With over 5,000 members and a balance of $1,300,000, the Holy Redeemer Credit Union is the largest single popular credit institution in British Honduras. Forty-two other credit unions are in existence in other parts of the country. As with the commercial banks, the Holy Redeemer Credit Union has also treated house mortgage loans as personal loans. It holds about thirty such loans at an average value of $6,900. Terms are at 12% interest for three to five years. Members have received a 5% patronage dividend on deposits in recent years, which effectively reduces their interest, depending upon the size of their deposits. A 100% loan to value ratio is permitted. Mortgage values in excess to $275 must be backed by 100% collateral or surety of co-signers. All loans are insured by CUNA Mutual Insurance Company and there has not been a single loan delinquency to date.

The credit union in conjunction with a local insurance company also provides a form of construction finance to its members who have a long-term mortgage commitment from the Reconstruction Development Corporation. Progressive insurance for the loan is granted as construction draw-downs are made. About sixteen such loans have been made for a one-year term. Interest and collateral requirements are identical with the three- to five-year term mortgages.

Currently the Holy Redeemer Credit Union has a waiting list of some 40 teachers who have requested mortgage loans of an average value of $5,500. The highest value mortgage loan made is $22,000 and the lowest is $1,035. It is the opinion of the officers that house mortgage loans should have a minimum value of $5,500, because below this market level, borrowers suffer from unsteady income and substantially add to the risk of the credit union.

HOUSING SUPPLY

Though sand, gravel, and timber are plentiful everywhere in British Honduras, all other major building materials must be imported. Of about $30 million dollars of imports each year, building materials account for about seven percent, or $2,700,000.

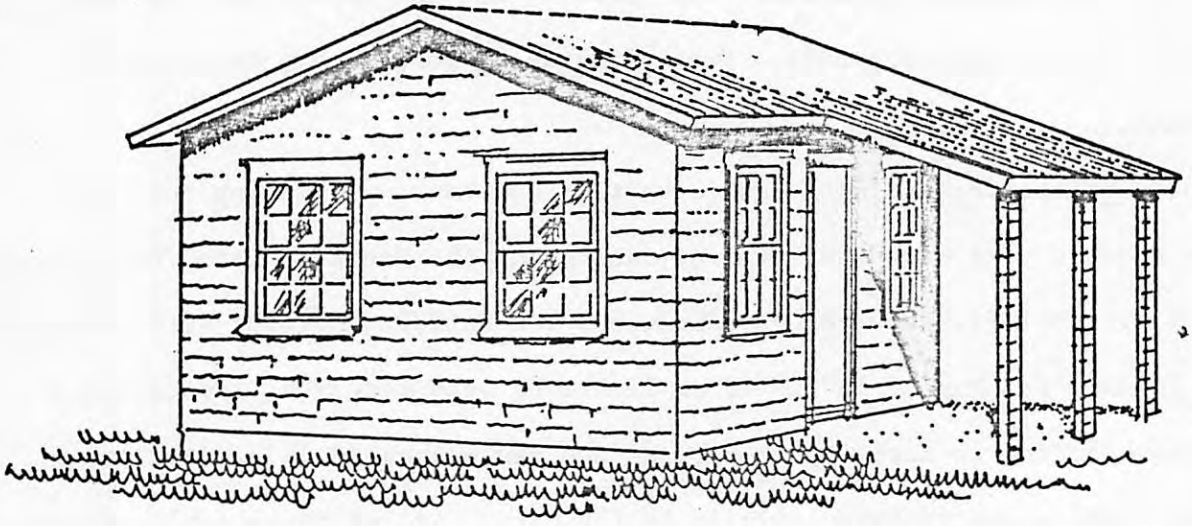
There is no organized house building activity aside from the modest construction of the government's Housing and Planning Department. Most construction is carried out under direction of an individual house owner through contracted carpenters, their helpers, the owner and his relatives. British Honduras has a single, practicing architect. Several subdivisions have been proposed by real estate speculators for purchase and development as retirement communities by foreign nationals. None of these proposals have been carried out to date.

Authorizations for building issued by the Department of Housing and Planning are said to vary with the level of lending of the Reconstruction Development Corporation. In 1971, about 850 applications for building permits were received. Between January and May of 1972, 125 applications were received, indicating a substantial decline in activity to perhaps 500 new houses in 1972. Applications and permits are required only in Belize City. All of these applications will not be utilized during the year. We may estimate that only 250 to 300 dwellings will be constructed. Based on the estimate of Table 25 , which indicates that Belize City has about 66% of the urban population and 50% of the housing, we may conclude that from 500 to 600 urban units are built each year throughout British Honduras, together with an equal number of rural units, or about 1,000 dwellings in total per year.

As evidenced by building permit applications received in Belize City, new construction is below the effective and immediate demand by an estimated 50 to

BRITISH HONDURAS

MINISTRY OF EDUCATION HOUSING & LABOR



DWELLING COST
$ 1,500

DWELLING AREA
45 M²

100 units per year. This scarcity of new housing is probably directly related to the scarcity of funds available for mortgage lending and the underdeveloped character of the home building and land development industries.

TABLE 30

Construction Costs and Standards - May 1972

1. Excavation	
trenching 2'-0" deep	$2.75 yd^3
2. Concrete in place	.48 yd^3
cement - 96 lb. sack	2.53 sack
3. Steel-reinforcing grade	.27-1/2 lb.
4. Timber - unseasoned	.22-1/2 sq. ft.
seasoned , carpentry grade	.45 bd. ft.
5. Concrete Block	5.00 yd^3
4" wall	5.00 yd^3
8" wall unfilled	6.70 yd^3
soil cement brick (4"x6"x12"	.09 each
6. Roofing	
corr. galv. steel (12' x 22")	.27-1/2 sq. ft.
corr. asb. cement (8' x 38")	.29 sq. ft.
7. Nails	.41 lb.
8. Drainage & Water Supply	
4" PVC pipe	.38 ln ft.
4" pitch fiber pipe	.68 ln ft.
pipe installation	.14 ln ft.
9. Wood window sash	7.23 pair
10. Toilet W.C. (uninstalled)	67.00 each
11. Concrete shower pan	10.00 each
12. Wood panel and batten doors	6.50 each

Construction Fees for Private Building Companies

Completion Bond:	2% of construction value for a minimum of one year increments.
Contingency Fee:	5% for increased cost of labor and materials
General and Job Overhead:	14.7% including maintenance, salaries, travel, storage, sheds and security watchmen.
Profit:	10%

RECOMMENDATIONS

Recommendation No. 1

A rudimentary mortgage lending program covering the entire country has been established by the government's Reconstruction Development Corporation. Since 1962, nearly 1,500 loans have been made. The average loan is for $2,070, corresponding to a house cost of $2,277. One good feature of the program is that the 10% down payment must be made in the form of self-help labor or materials before loan expenditures may be made, thus assuring greater interest of borrowers in completing their construction program.

The Reconstruction Development Corporation has exhausted its funds and is currently unable to continue its vital activity. Requests have been made by the corporation to expand its funding by at least $2 million for further home-lending purposes.

Funds should be made available to the Reconstruction Development Corporation subject to improvement of loan service practices to reduce the present thirteen percent delinquency rate. Cooperative housing and the single-mortgage ownership system with repayment reserves may be profitably applied for this purpose.

a) A $2 million loan would double the current home-mortgage portfolio.

b) The RDC should consider more loan support of the low-cost house building activities of the government to reduce subsidies and expand the low-cost housing program.

c) National housing finance functions of attracting local capital through guaranteed commercial bank loans on deposits should be expanded.

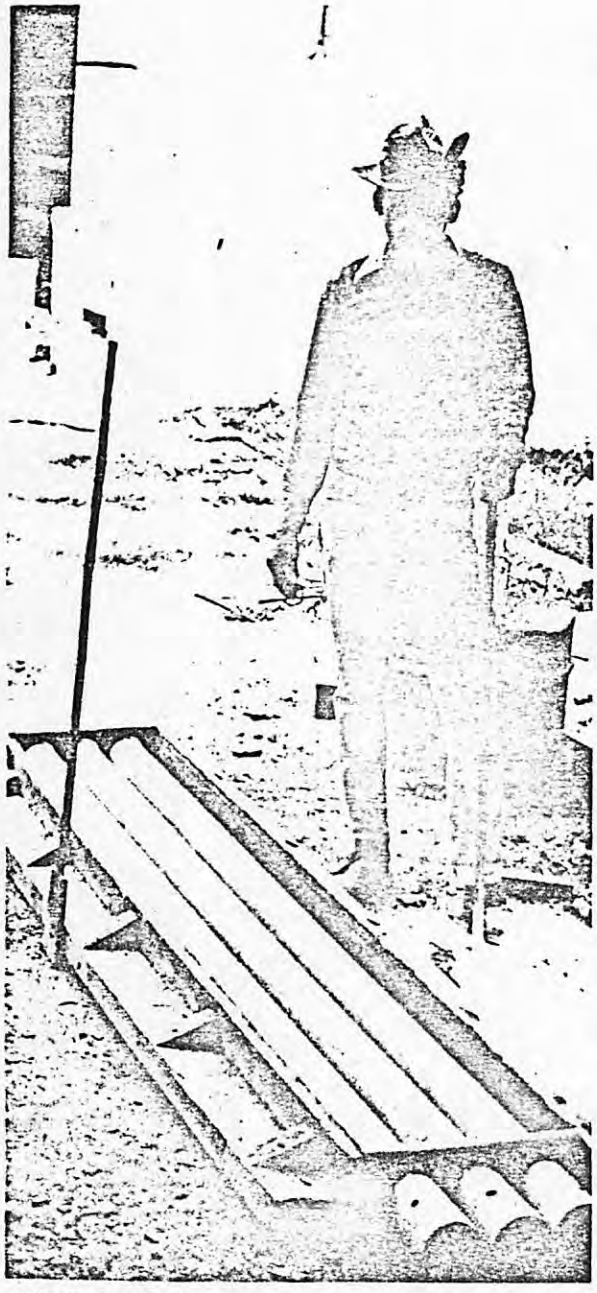
Recommendation No. 2

1. Cooperative institutions such as the Holy Pedeemer Credit Union have

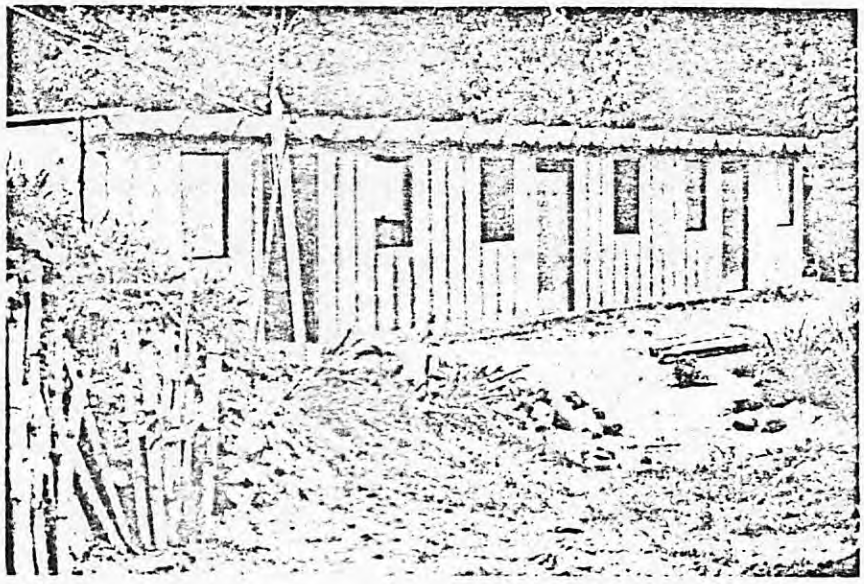
recognized the need for an opportunity which a program of lending for housing presents. They are hampered, however, by competition for their funds for other purposes and the general scarcity of investment capital.

2. Cooperative savings and credit institutions should be encouraged to consolidate their current mortgage loan functions into a separate savings and loan bank for middle income housing. A guaranteed loan of $1 million may be made for this purpose.

BY PRODUCING THEIR OWN BUILDING MATERIALS PARTICIPANTS IN PROGRAMS FOR MINIMUM SHELTER CAN REDUCE COST



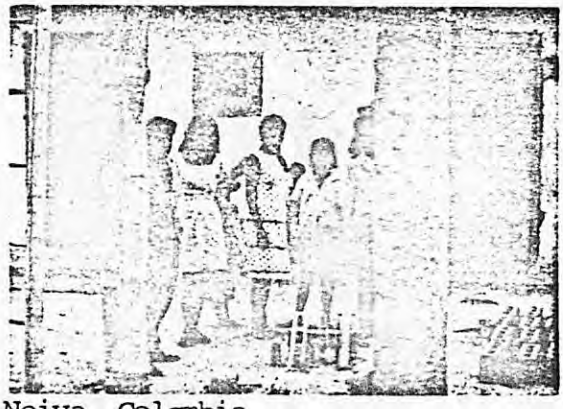
El Salvador
The Fundacion de Desarrollo y Vivienda Minima has experimented with molding soil-cement plank for walls.



The experimental house completed



Atlantico, Colombia Self-help production of soil cement blocks by the CINVA - RAM machine



Neiva, Colombia
A community owned and operated facility for the self-help production of concrete blocks

V. LOW COST HOUSING IN BOLIVIA

BACKGROUND

Bolivia is the nation which is perhaps at the earliest stage of economic development among the South and Central American republics. With a per capita income of $200 annually, it is one of the poorest countries in the Western Hemisphere. Most Bolivians live on the central, arid, upland plateau which ranges in height up to 12,000 feet above sea level. They are predominantly Indians and farmers in an area which is not hospitable to agriculture. Most of the national territory is tropical lowland and is largely unexploited and underpopulated.

Despite the poverty and high rate of illiteracy, Bolivia is among the few Latin American countries which has undergone a thorough social revolution. An extensive land reform program is being completed. The major sources of domestic and foreign wealth are in the hands of the government. Popular organizations including labor unions are sources of political influence; however, the political situation remains unstable. Economic growth has been depressed by the controls placed upon domestic and foreign investment, demoralization of labor and management inefficiency in government enterprises. It is estimated that 20% of the labor force is currently unemployed.

With an annual rate of increase of 2.3%, the population of Bolivia is growing more slowly than the average in Latin America. The impact of urbanization is not yet critical. However, there is a moderately high degree of rural-urban migration particularly evident in the capital, La Paz. In 1965 the housing deficit was calculated at 240,000 units. It has also been estimated that 80% of the rural housing is deficient. By itself, this estimate would increase the total deficit to a figure closer to a half-million dwellings. In addition, approximately 21,000 new families

who are in need of shelter are added to the population each year.

From an analysis of other countries of the region with similar income patterns, we may estimate that perhaps thirty percent of the population falls into the income range of $400 to $700 per year and that at least three-quarters of these will be found in urban areas. The effective demand of new families, alone, who are added each year to the population may be estimated to be 4500 urban units and 1,500 rural units costing no more than $1,500. Currently the public and private building industry, concentrating almost totally in urban areas, produces about 1,400 units of an average cost of $3,300. In recent years over sixty percent of these units have received external financing - chiefly from the Inter-American Development Bank. Current construction activities fail to fulfill the effective demand for housing resulting from population increase: they produce only a fraction of the volume needed to reduce the substantial residual housing deficit.

HOUSING NEED

According to preliminary reports of the 1970 census, Bolivia has a population of about 4.66 million persons. Three million persons or 65% of the inhabitants live in rural areas. Growth in the country-side has been slow - only about 1-1/2% per year. 1.65 million people (35%) live in urban areas and the growth rate is about 4.1% per year. Table 31 shows the population in the several urban centers of the country. Note that over the 20 year period, Santa Cruz increased its population by 290%.

The capital, Potosi, Sucre, Torija and Trinidad grew at about the same rate. Cobija grew a little faster, and Cochabamba and Oruro a little slower. Adverse effect of rural-urban migration are especially evident in La Paz because it

is aggravated by the extreme shortage of water and investment in urban infrastructure such as sewerage, electricity and roads. Forty-four percent of the total urban stock of dwellings is serviced by potable water. Only twenty percent of the population of La Paz has access to sewerage service. The structures found in migrant and slum communities, however, are substantially constructed of adobe with floors of dirt and roofs of galvanized steel or mud on wood beans. Simple urban and rural houses are typically of one or two rooms, enclosing a total of from $12m^2$ to $15m^2$ in area.

URBAN GROWTH EXPERIENCED BY THE MAIN NINE URBAN CENTERS BETWEEN 1950 AND 1970 (in thousands of inhabitants) TABLE 31

City	1950	1970	% of urban population
La Paz	321.1	679.0	41.0%
Cochabamba	80.8	149.9	9.0%
Oruro	63.0	119.7	7.2%
Potosi	45.7	96.8	5.8%
Santa Cruz	42.7	124.9	7.5%
Sucre	40.1	84.9	5.2%
Tarija	16.9	35.7	2.2%
Trinidad	10.7	22.8	1.4%
Cobija	1.7	4.5	.3%

We estimate that there are, on the average, 5 persons per family in urban areas and 6 persons per family in rural areas. Thus, dividing by population in these areas, we estimate that there are a total of 830,000 Bolivian families or, roughly, accommodations for 330,000 families in urban areas and 500,000 families in rural areas. At 4.1% the urban

population is growing by 13,500 families per year and at 1.5% the rural population is growing by 7,500 families per year -- a total of 21.000 families.

The National Housing Board, CONAVE, estimated that there was a need for 138,789 urban dwellings in 1966 and in 1967 broke these figures into 124,959 new dwellings and 42,818 dwellings in need of replacement - a total of 167,769 houses.

There are no recent detailed studies of housing conditions in the Republic. We may conservatively estimate that at least 30% of urban housing is deficient by any convenient objective standard. The Bolivian "Association of Popular Housing: (VIPO) estimates that 80% of rural housing is deficient. From preceeding estimates of existing accommodations in urban and rural areas we may conclude that 100,000 urban dwellings and 400,000 rural dwellings are in need of replacement or substantial repair. Over a thirty-year period it would require the construction of 15,000 units per year to reduce this deficit in addition to providing for the needs of the 21,000 new families added annually to the population.

HOUSING DEMAND AND INCOME

Average per capita income of Bolivia is $200 per year which closely corresponds to the family income of the predominant rural population. Eighty percent of the population earns only 20% of the income. Despite the low cash income, the wealth is significantly more equitably distributed as a result of the agriarian reforms of the 1950's. The average urban family income is perhaps around $800 per year. Unskilled construction laborers earn on an average $29.00 per month. Skilled laborers can earn between

$45.00 and $50.00 per month. Inflation has had a very minor effect on the cost of living over the past six years.

There are no statistics available on the distribution of income in urban and rural areas of Bolivia. We may estimate, based upon the characteristic income distribution of other Latin American countries analyzed in this study, that from between 20% to 25% of the urban population and 10% to 20% of the rural population have annual incomes in the critical $400 to $700 range. This would mean that between 30,000 and 65,000 urban families and between 50,000 and 100,000 rural families would comprise the general market for low-cost housing; housing identified by FCH as having maximum unit cost of $1,500.00.

THE ROLE OF GOVERNMENT

Housing activities were centralized in 1970 under the Ministry of Urban Affairs and Housing. There are four component national housing boards under the Ministry which function as decentralized semiautonomous agencies.

THE NATIONAL HOUSING BOARD (CONAVI)

Beginning with its formation in 1965, CONAVI has become the primary agency for government assisted housing construction. It is a conventional housing and planning agency with 350 employees and 3,000 construction workers. CONAVI has an annual income of about $1,800,000, with about 40% coming from returns on mortgage investment and 60% from the State in the form of receipts from taxes. No statistics are available on the delinquincy suffered by CONAVI on its income from mortgages but informed estimates place the delinquincy as high as 30%.

Constructin since 1965 has been carried out with 60% of the financing from the Inter-American Development Bank. Approximately 900 dwelling units of an average unit cost of $2000 have been built per year. (See Table 32 The total IDB investment is $9.5 million. Community facilities including 11 schools, 2 market places and 6 health centers were also developed in conjunction with housing.

Future development of very low-cost housing, below $2000, is hampered by the general opinion that aided self-help programs organized in the past by public agencies have failed. No reasonable explanation has been given for this failure, and it seems that most of the cases were rather due to particular circumstances that do not support a policy of eliminating all aided self-help programs in the future.

TABLE 32

CONAVI CONSTRUCTED HOUSING WITH FINANCING
FROM THE INTER-AMERICAN DEVELOPMENT BANK

Department	Loan 1965-1968	Loan 1968-1972	%
La Paz	2,666	1,729	61%
Cochabamba	409	457	12%
Potosi	5	153	2.2%
Oruro	15	450	6.5%
Pando	--	52	7%
Chuquisaca	197	134	4.6%
Tarija	124	76	2.8%
El Beni	--	108	1.5%
Santa Cruz	114	475	8.2%
	Total 7,164 dwellings		100%

The National Petroleum Housing Board was recently reorganized from an earlier Petroleum Housing Committee formed in 1965. Activity has been minimal. The organization has produced a total of 417 dwellings from 1965 to 1971, or about 70 units per year.

The National Mining Housing Board, organized in 1966, has only a minimum staff of 20 persons. It is reported by the Inter-American Development Bank that the Board and its predecessor Committee produced 2,156 units between 1966 and 1969.

The National Teachers Housing Board. The staff for the Board is currently being organized.

Central Fund of Savings and Loan Associations (Caja Central)

The Central Fund is a semi-autonomous investment bank of the government and member associations for the purchase of mortgages made by mutual savings and loan associations. The Central Fund was established in 1966. It authorizes, supervises and regulates the activities of the associations and also provides short-term credit to them at 11% interest. In 1971 the Central Fund provided financing assistance worth $3,500,000 to associations. $875,000 in short-term credit was extended. About $2,628,000 worth of mortgages were purchased by the Central Fund, representing increased lending power to the associations equal to six hundred dwelling units: they accounted for 69% of the value of credit operations made by member associations in 1971. This is double the investment made by the Central Fund in 1970.

Bolivia has authorized an adjustment system to modify the interest rate of mortgages according to changes in the index of averaged wages and salaries. The Central Fund has responsibility for administering the system to minimize the effects of inflation and stabilize the climate for investment in housing.

To date, the Central Fund has not instituted an index for evaluating adjustments and no adjustments in mortgage interest have been made.

Since 1967, USAID has provided low interest and guaranteed commercial interest loans to the Central Fund totaling $3,650,000. In addition, low interest and guaranteed commercial interest loans totaling $2,480,000 in value have directly benefited individual savings and loan associations.

THE ROLE OF PRIVATE ORGANIZATIONS

Savings and Loan Associations. Authorization for the establishment of savings and loan associations was given in 1964. Since then, nine mutual associations owned by depositors have been formed, two in the capital, La Paz, and others in Orurs, Potosi, Tarija, Sucre, Cochabamba, Santa Cruz, and Trinidad. Savings and the value of mortgage loans have increased four-fold since 1966, when statistics were first compiled by the central Fund. In 1971, there were 11,254 savings accounts valued at an average of $225.00 each for a total savings fund of $2,500,000. Associations pay 8% interest to depositors and make loans for housing at 12% interest. Table 33 shows the growth of the savings and loan system since 1966.

TABLE 33

Year	Number of savers	Value of savings 000's	Value of mortgage loans 000's	Total number of loans	Loans per year
1966	1,676	--	--	--	400 (since 1964)
1967	3,613	$ 593	$1,915	400 (est)	-----
1968	4,896	$ 913	$2,725	600 (est)	200
1969	6,427	$1,335	$3,259	740 (est)	140
1970	7,739	$1,907	$4,878	1,100 (est)	400
1971	11,254	$2,522	$6,969	1,566	466
			Average Loan Value $4,450		Average 300 units/year

Other Institutions

It is estimated that private builders and traditional lending agencies produce an additional one hundred dwellings in the middle- and high-cost housing range. Some large builders have their own savings plans for housing in the $10,500 range. The term is typically 4 1/3 years, however, an interest charge of about 3% is made to the depositor.

Cooperatives

Five cooperative housing agencies springing from the labor-oriented credit union movement have built 300 to 400 dwellings in the last 6 years. While several of these organizations are only cooperative development and finance agencies without post-occupancy service obligations, others have instituted a form of global mortgage and adhere to the traditional cooperative housing tradition, principally as a means of saving legal transfer costs.

Initial financing for several of the organizations has come from grants awarded by European religious agencies. Remaining funds have been drawn from savings and loan associations and savings of the membership of the parent credit union, which, in one case, numbers 15,000 members.

One experimental project for rural housing carries a unit cost of $1,300. Most cooperative housing has been built in the $2,500 to $7,000 unit cost range.

Association of Popular Housing (VIPO)

VIPO was formed expressly to work with the farmers federation "Rural Agricultural Organized Development Action" (ARADO). It provide technical services for the construction of housing to cooperatives and housing associations. From March 1965 to 1971, 116 rural dwellings and 18 urban dwellings were completed. In addition, a brick production and carpentry facility were developed along with construction of a variety of community buildings.

The typical rural dwelling of $80m^2$ of covered area and three sleeping rooms costs only $300. A two- room urban dwelling with full utilities service of $38.5m^2$ covered space on a lot of $260m^2$ costs $1,765. VIPO's development service fee is 10% of the cost of labor, materials and transportation.

HOUSING SUPPLY

In the six-year period between 1965 and 1971 the government estimates that over 10,000 dwelling units were constructed, of which the National Housing Board, CONAVI, built 6,110 units. Table 34 shows the annual estimated construction and total construction for this period.

TABLE 34

HOUSING SUPPLY IN BOLIVIA 1965-1971

Institution	Total construction 1965-1971	Average annual rate of construction
CONAVI	6,110	900
Petroleum Housing Board	417	70
Mining Housing Board	2,156[1/]	430
Savings and Loan Assn.	1,566	300
Others (including co-ops)	600	100
	10,850	1800/year

1/ (Socio-Economic Progress in Latin American, Inter-American Development Bank, Feb., 1971 p. 122)

Housing during this period was built almost exclusively in urban areas. We may conclude that the annual housing rate of supply of 1,800 dwellings is only 13% of the 13,500 new urban units required to shelter the natural growth of the cities.

STANDARDS FOR DEVELOPMENT OF HOUSING COSTING $1,500

Two private agencies, the Association of Popular Housing (VIPO) and the "Merced" Credit Union have developed housing costing under $1,500. Both are rural housing programs and neither are equipped with water, sewer or electricity. VIPO and "Merced" have produced minimum urban housing programs at slightly higher cost - $1,760 and $2,160. Sewage disposal is generally by septic tank; however, the urban dwellings contain water and electric servicing.

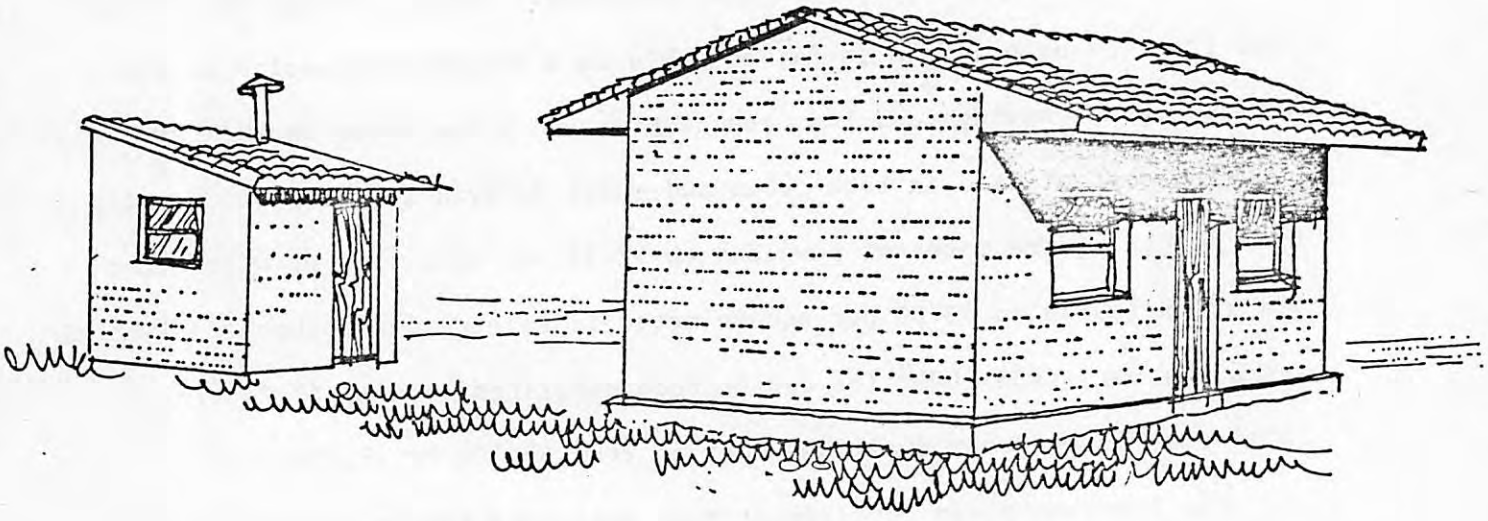
The Guapay Savings and Loan Association has built core houses costing $2,500 to $3,500 on fully urbanized lots. They are designed to serve moderate income families and to be expanded as the family grows. Though the average loan from the association is $4,450, this is a welcome expression of the willingness of savings and loan associations to serve lower income borrowers.

The cost of land in both urban and rural Bolivia is very low, ranging from 8¢ per square meter of raw land to $2.32 per square meter with water and utilities up to $8.00 per square meter in select neighborhoods. Typical lot sizes vary from $260m^2$ for one-bedroom dwellings costing $1,765 to about $550m^2$ for five-bedroom dwellings costing from $5,000 to $8,000.

The Inter-American Development Bank estimates that minimum income, single family housing in Bolivia would cost about $27.00 per meter square, which is very low for the region. The "Merced" cooperative experimental rural project at $1,300 per unit costs about $38 per meter square for 38 square meters of covered area. The "Merced" cooperative urban unit costing $2,160 on 41 meters square covered area costs $53 per meter square including land and fees.

BOLIVIA

LA MERCED CREDIT UNION



DWELLING COST
$1,300

DWELLING AREA
38 M²

For self-help rural housing the cost of materials, specialized labor and transport may be more meaningful. VIPO's rural unit of 80 meters square of covered area costs $3.75 per meter square. A more typical cost for urban self-help housing would be $5.00 per meter square.

Some selected material prices in Bolivia are as follows:

Steel	$ .30 kg.
Rough lumber	$ .13-$16.5 sq. ft.
Finishing lumber	$ .25 sq. ft.
Cement	$ 2.00 96 lb. bag
Gypsum	$ .83 96 kgs. bag
Oil Paint	$ 4.50 gallon
Toilet fixture	$37.50-$41.50 each
Lavatory	$12.50-$16.60 each
Water pipe 1/2"	$ 2.50 six meter length
Water faucet	$ 1.65 each
Plumbing installation labor	$ 4.15 per fixture
Electrical installation labor	$ 5.85 per fixture

Cooperative credit unions and savings and loan institutions are the principal source of mortgage loans. Terms vary widely. Table 35 shows the mortgage terms of savings and loan institutions and two representative credit unions.

TABLE 35

SUMMARY OF LOAN TERMS FOR HOUSING IN BOLIVIA

Institution	Interest	Term	Down payment	Maximum or Typical Unit Value
"La Merced" Credit Union	12%	5 yrs.	10%	$1,300 - $3,500
	12%	5 yrs.	15%	$3,500 - $5,000
	12%	5 yrs.	20%	$5,000 - up
"San Pedro" Credit Union	6%	15 yrs.	10%	$4,000 - $7,000
	12%	15 yrs.	10%	$7,000 - up
Savings and Loan Assoc.	12%	20 yrs.	10%	all values

Indirect and direct overhead expenses are defrayed by VIPO with a charge of 10% of labor, materials and transport costs. This is insufficient to sustain the organization, and donations have been required from private philanthropic sources.

POTENTIAL PROGRAMS FOR LOW-COST HOUSING IN BOLIVIA

The housing situation is critical in Bolivia and trends indicate that it seems to be continually deteriorating.

The public sector is organized to operate and concentrate on alleviating the situation of low income groups. Its financing is limited and during the last few years it largely depended upon foreign loans provided mainly by the Inter-American Development Bank. This source of finance is being re-channeled in recent years away from housing toward larger urban utility investments.

The private sector is mainly composed of the savings and loan system and a small group of private developers. It has concentrated on financing the production and mortgage loans for middle and middle-high income groups, although smaller associations have been willing to experiment with lower-cost core housing.

Cooperative housing has become established in Bolivia although at a very small scale. Cooperatives, however, have constituted the only institution which has specifically attempted to resolve the housing problem of low income families who can afford to pay no more than $1,500. Housing cooperatives have come far with only minimum attention of organized technical assistance — even to the degree of establishing a form of global mortgage (la "Merced"). This spontaneous initiative appears to be at a stage of development where it may be profitably expanded.

RECOMMENDATIONS

1. AID should urge the support of the Central Fund of the Savings and Loan System (Caja Central) for complementary low-cost housing programs of cooperatives or a cooperative housing federation.

Credit unions, when they serve the housing needs of their members, function in a manner very similiar to the mutual savings and loan associations, though for lower-cost housing. The mortgage terms are very similiar as well. Credit unions may be encouraged to join the Caja and sell their mortgages to it as a means of intensifying the effort in lower-cost housing. By lowering the average sales price for housing financed uder the S and L system, the record of USAID with its $13,580,000 support of the system will be enhanced and shelter for more families will be achieved.

Cooperatives have borrowed funds from savings and loan associations in the past for the purpose of supplementing their own resources for housing. Loans made from the central fund will provide an additional one percent interest savings to pass on to their beneficiaries in housing.

2. AID should make a concessional loan of $2,000,000 to the Association for Popular Housing (VIPO). Cooperatives have demonstrated the only consistent concern in Bolivia for the production of housing of a cost lower than $1,500. VIPO has pioneered the program in rural areas; however, expansion is hampered by an initial lack of capital.

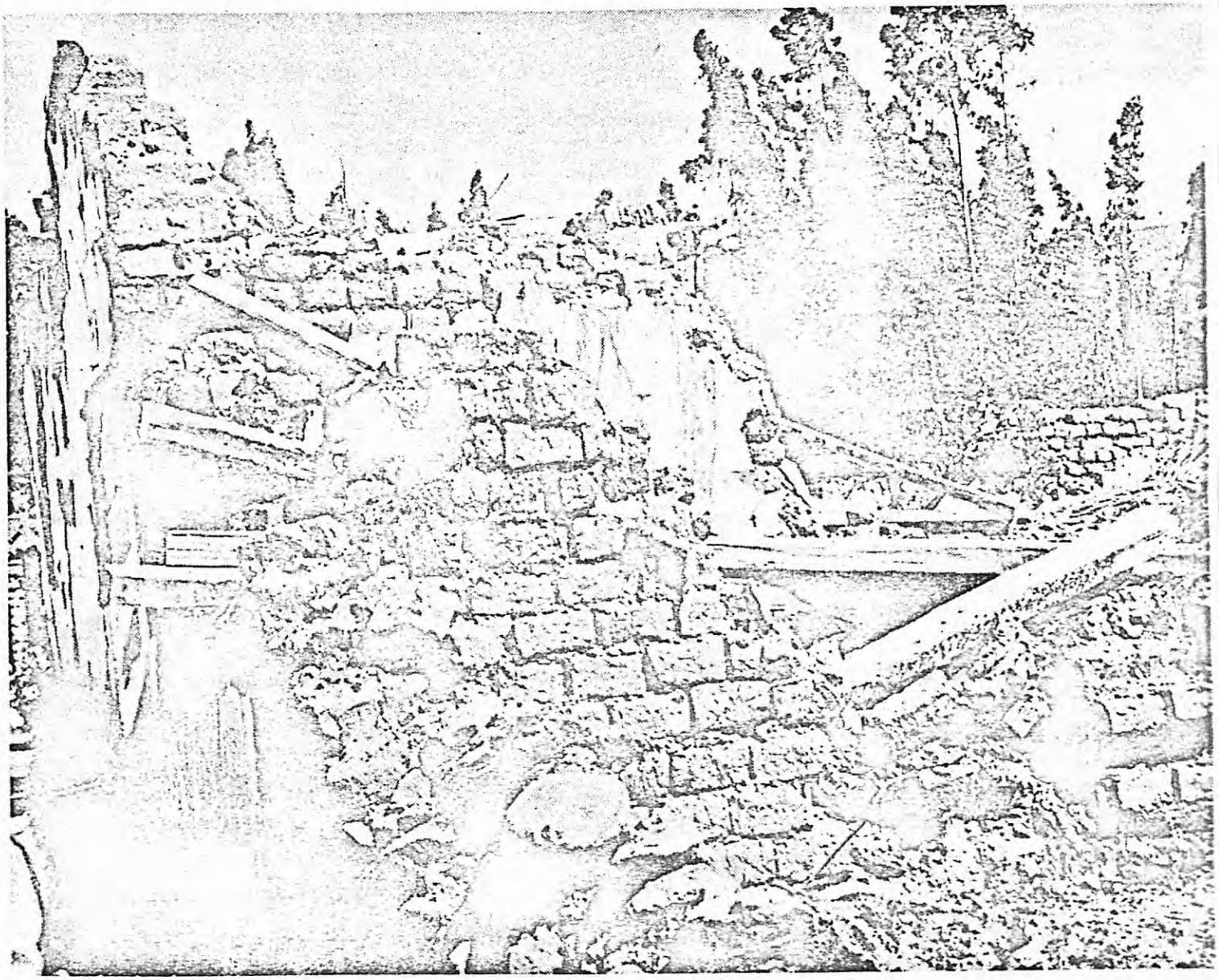
While surprising in many aspects of their housing achievements, a certain lack of sophistication or specialization is evident in the shelter efforts of the cooperatives working in lower-cost housing. Project maintenance has not been adequately provided for via the extablishment of either automatic or volunatry homes associations. Cooperatives continue to

"experiment" with different construction designs instead of concentrating on standardization of techniques, etc. Most lowest-cost housing has previously been built only in rural areas.

VIPO and credit unions such as "La Merced" should be encouraged to substantially expand their construction activities with provision of capital and expanded corps of professional assistance to promote, design and supervise new housing projects.

3. AID should require that cooperative organizations, such as "La Merced" and "VIPO", participant cooperatives and cooperative methods be made a part of the concessional loan proposal submitted by CONAVI to AID for sites and service shelter. Such a policy would assure that responsible participant leadership is developed, that democratic methods and community identity and concern is fostered, and that repayment of the loan to CONAVI will be achieved. Cooperative organizations already committed to development of low-cost housing will gain added experience in urban low-cost programs.

PERU



The effect in the Chimbote area of the earthquake of May 1970 was a disaster of 80% of the housing stock.

VI. LOW COST HOUSING IN PERU

BACKGROUND

On May 31, 1970 an earthquake struck the heavily populated and industrial zone immediately north of Lima. This catastrophe virtually destroyed the housing and urban infrastructure in a zone extending 500 kilometers along the coast and 150 kilometers inland from the sea.

International agencies, including U.S. agencies immediately rushed food and supplies into the area and AID began plans for a rehousing program which is to become the largest single effort of its kind in the history of the Agency. This report is confined to the analysis by FCH of the housing problems in the earthquake area - particularly in the Chimbote area. It is drawn from numerous documents prepared at the request of AID and dating from shortly after the initiation of rescue efforts.

HOUSING NEED

Over fourteen million Peruvians live in an area of about a half million square miles. This makes the country the largest to be included in the FCH study of minimum shelter. The geography and settlement pattern, however, is quite similar to that of Guatemala and Bolivia. A large farming population of Indian descent is concentrated in the mountainous areas, while a large expanse of rich tropical forest remains largely uninhabited. Similarly, the rural population is rapidly moving to the cities and seeking jobs in industry. This is the modern sector of the economy, affecting only about half the population which is overwhelmingly concentrated in the capital.

Housing studies of Peru benefit from the exceptionally detailed statistics and plans which had been prepared in the early 1960's. Great concern was being expressed about the phenominal growth of illegal squatter settlements, particularly in and around Lima. Cities were growing at 5% per year or twice as fast as the country as a whole. Already over half of the corporate area of the capital - which had been held vacant for speculative purposes, or due to the difficulty of building, had been seized.

The results of the 1961 housing census showed that nearly 30% of dwellings in urban areas were identified to be overcrowded Forty-three percent of the dwellings had adobe walls, twenty-five percent had dirt floors and twenty-nine percent had straw roofs. The sanitation facilities were surprisingly good except for the squatter areas. Only 20% were without access to running water and only 16% were without all services. To accommodate the population growth of this nine-year period, it was calculated that 51,000 new units had to be built each year; 10,800 per year in the Chimbote area alone. Up to this time the country's highest production from all sources was only about 10,000 units per year. While the government put on a massive resettlement and urban improvement program, chiefly in Lima, the earthquake erased all these gains in just a few minutes. In 1961 there were 270,000 urban dwellings which were classified as deficient. In 1971 there is estimated to be one half million deficient urban dwellings in Peru.

Chimbote, at the center of the earthquake zone, had increased in population from 66,780 in 1961 to over 160,000 in 1971. This is over 13% per year! The town had been the center of the fastest growing region of the country for the previous two decades as well. While indices of overcrowding for the remainder of the nation existed in only about 30% of the housing stock,

overcrowding in this northern region occurred in 60% of the housing stock. Conditions for the earthquake could not have been more critical to aggravate the countries' housing problem. The government estimates that 39% of the population, some 16,000 families in the city alone, are in need of new housing. Another 3,000 units must be replaced over a five-year period.

Over one and one-half million people in three departments were affected by the earthquake and thousands of lives were lost. The total effect of losses may never be known. Reconstruction has begun at a slow pace and two years after the disaster little progress can be seen. The economy of the region has been severely affected and suffered a staggering blow.

HOUSING DEMAND

In addition to the terrible destruction to the urban infrastructure and industry dealt the northern region in 1970, a second blow has recently been struck the economy of the area. The growth of the area is dependent upon the fishing and fish processing industry. This year, currents in the ocean which bring the rich fish harvest to the coast of Peru have failed and the industry is depressed. Many needy families suffering from the lack of adequate housing are now reluctant to be exposed to additional long-term debt. Savings are being depleted to buy food.

Before the fishing emergency, the average income in Chimbote was about $65 per month. Thirty-five percent of the population fell in the median income sector of between $40 and $80. In contrast, average farm incomes in the highland averaged between $16 and $20 per month. Employment is not evenly distributed even here, however. In the town of Huaraz, with 15,639 people, 87% of the families reported they had no income at all! Sixty percent of the housing was destroyed and mortgage repayment capacity was nil. According to one source, the income in the surrounding area is only $4.60 per month.

The town of Barrance, within the earthquake zone, has relatively complete recent data of housing demand. About 2,700 families live in the town. They have an average family size of 5.65 persons for a total population of 15,200. The rate of growth is projected at 5.06%, implying a need for 150 new units per year.

Construction demands over and above population increase may well be higher. Home ownership in 1963 for the country was greater than 55% of the population. Sixty-four percent of the residents in Barranca are renters.

Single rooms rent for $11.60 in the town and land costs average $18.50 per square meter. This is high, although a survey of incomes and rent does not appear to be excessive.

TABLE 36

INCOME AND RENT COSTS - BARRANCA, PERU
(in U.S. Dollars)

Average Family Income (per month)	Percent of Families	Average Rent	Percent of Income
0 - $58	35%	$ 5.80	10%
$58 - $74	51%	$18.50	25%
$74 - $310	12%	$26.60	8.6%
over $310	2%	$41.50	--
Total 2,700 Families			

Representative rents in other towns of the region appear to fall below 10% for incomes below the median and range from 15 to 25 percent at median incomes of around $65 per month.

At this writing, results of a definitive housing market study for the earthquake rehabilitation area have been delayed. In 1962 a very thorough evaluation of incomes of the poor, urban resident in the country was completed by the Department of Planning of the Corporacion Nacional de la Vivienda - since incorporated into the Ministry of Housing. Though absolute

values for incomes have changed in this period due to changes in the economy and the exchange rate with U.S. Dollars, it is reasonable to assume that the proportion of families in the eleven income groups, with respect to the median income, is the same. Table 37 indicates that fifty percent of the population inhabiting marginal communities have incomes within $35 of the median income. If the median income is $40 per month, as it was in 1962, a range of housing alternatives with a monthly charge of between $10 and $17 will be within the payment capacity of at least fifty percent of the people.

TABLE 37

PERU: FAMILY INCOME IN SELECTED SQUATTER SETTLEMENTS 1962
(in U.S. Dollars)

Family Income		Families	
Monthly	Interval increase	Number	Percentage
$ 0 - $15.00	+$15.00	500	7%
15.01 - 30.00	+ 15.00	1,514	21.1%
	median income $40.00		
30.01 - 45.00	+ 15.00	2,447	34.3%
45.01 - 60.00	+ 15.00	1,414	19.8%
60.01 - 75.00	+ 15.00	765	10.7%
75.01 - 90.00	+ 15.00	254	3.6%
90.01 -105.00	+ 15.00	123	1.7%
105.01 -120.00	+ 15.00	56	0.7%
120.01 -135.00	+ 15.00	25	0.4%
135.01 -150.00	+ 15.00	19	0.3%
150.01 - +		25	0.4%
	Total	7,142	100%

Source: Corporacion Nacional de La Vivienda, Depto de Planeamiento y Financiacion, Informacion Basica sobre Barrios Marginales eu la Republica del Peru pp 64-133 (exchange used U.S. 1.00 = S/26.81)

THE ROLE OF PUBLIC INSTITUTIONS

Public house construction began in volume following the creation of the National Housing Corporation in 1946. The Corporation became the National Housing Institute in 1960. Maximum production of around 1,400 units per year was reached in 1964 and again in 1968. In 1963 another organization, the National Housing Board, was created to coordinate housing activities and integrate housing with municipal and regional plans. Following the establishment of the current Revolutionary Government, the Board has retained its identity; however, policies are effectively in the hands of the new Ministry of Housing.

Beside the Ministry of Housing, the government has created a series of simiautonomous agencies for special functions which are also concerned with housing. Among these are the National Development Office of "Pueblos Jovenes" (squatters settlements) and the "Commission for Reconstruction and Rehabilitation of the Zone Effected by the Earthquake of 31 May 1970" (CRYRZA).

FCH survey activities have been chiefly confined to the CRYRZA agency due to the extraordinary need for minimum shelter in areas under its jurisdiction.

The oldest continuous government housing agency is the Central Mortgage Bank. From 1926 at its inception to recent years, the Mortgage Bank has granted loans only at very conservative terms which have been attractive chiefly to the higher income sector.

In 1963 the National Housing Bank was created to exercise supervisory control over private savings and loan associations and mutual credit associations for housing. The Bank receives savings, negotiates loans with foreign capital sources, issues bonds and makes general housing loans.

THE ROLE OF PRIVATE INSTITUTIONS

One of the most impressive examples of the impact of private initiative for housing in Latin America is the record of the savings and loan institutions in Peru. Starting with a savings fund of $1,600,000 in 1961 and two associations, the system increased to 22 associations with 42 branch offices in nine years and three months. Accumulated savings totaled $94,000,000 among 375,800 savers. The average mortgage loan is $3,000 and approximately 36,700 mortgages were held by the associations by the close of 1970.

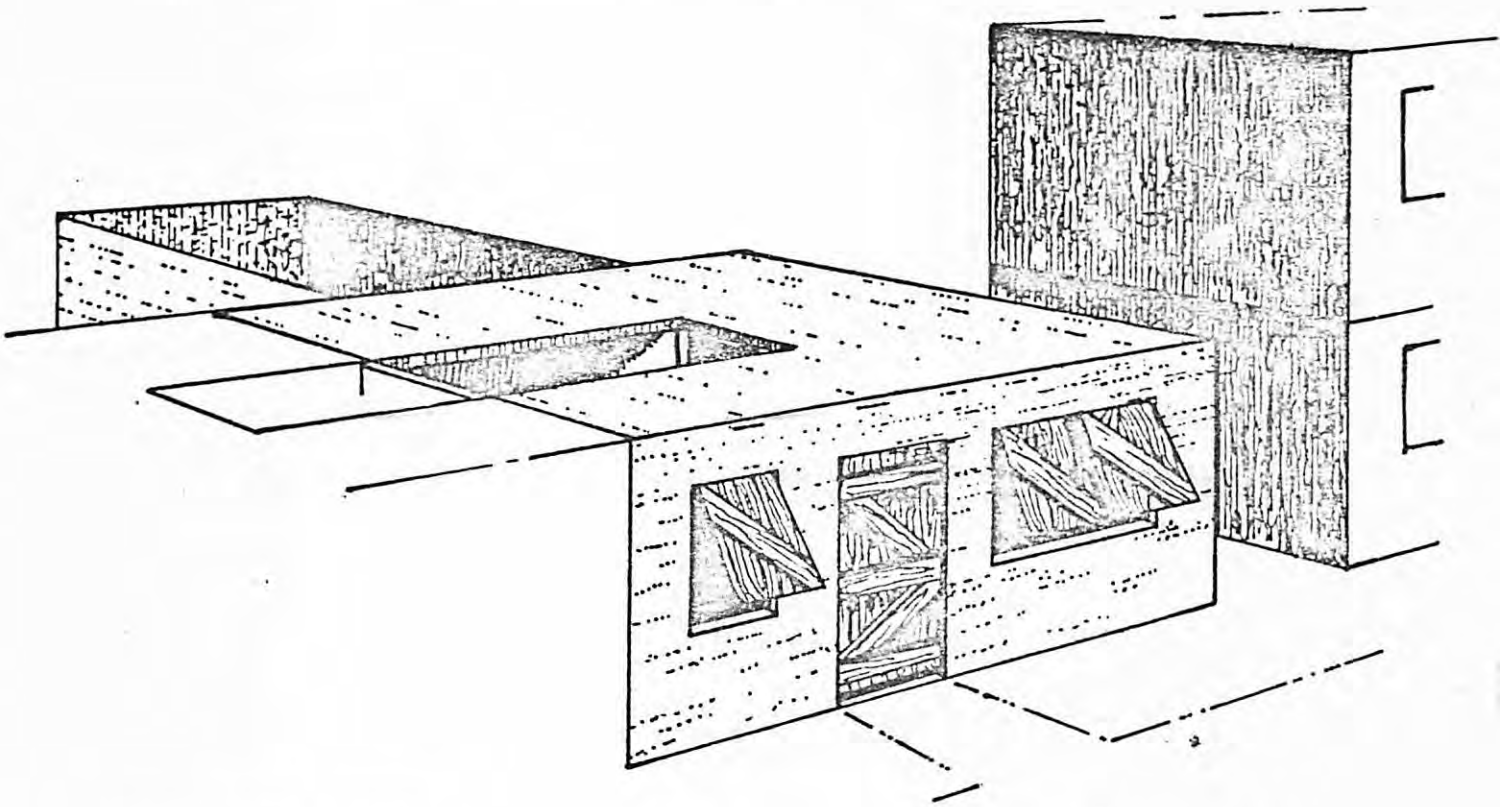
Credit unions are also active in housing finance in Peru. In 1962 the Central Credit Union, a federated credit union bank, secured a loan of $1,000,000, of which over half was turned into housing loans of an average value of $1,060. The lending program was particularly effective for assistance in rural housing and home improvement in remote areas where access to savings and loan associations or government programs is not available.

Many mutual credit associations for housing exist in Peru and they have a good reputation in the development of middle income housing. They are essentially cooperatives with many of the characteristics of savings and loan associations whose function is to accept savings with which to purchase land for construction and often to sponsor the construction of dwellings.

The Trade Union Federation has sponsored a particularly strong mutual credit association - "ASINCOOP" and numerous urbanizations which continue to be represented and promote the advancement of housing developed in this manner. In 1962 the mutual credit associations and beneficiaries of their programs formed the "Cooperative Housing Federation" of Peru.

PERU

CRYRZA HOUSE PROPOSED FOR THE REHABILITATION AND RECONSTRUCTION OF THE ZONE AFFECTED BY THE EARTHQUAKE OF MAY, 1970



DWELLING COST
$1,557.70

DWELLING AREA
60 M²

LOT AREA
100 M²

TABLE 38

DWELLING UNIT COSTS: MINIMUM SHELTER PROGRAM
Chimbote, Peru 1972

I Direct Costs		
Urbanization		$ 390.00.
Materials (water, street lighting, drainage)		260.00.
Labor		130.00.
Dwelling construction ($14/m^2 x 60m^2)		835.00.
Materials		785.00.
Labor		50.00.
	Sub total	$1,225.00.
II Indirect Costs		
Planning, design, administration, supervision		$ 98.00.
Land (¢.14/m^2 x 100m^2)		14.00
	Sub total	$ 112.00.
III Community Facilities		
Playground and day care center		$ 16.70.
Community meeting room		4.70.
Recreation fields		5.60.
	Sub total	$ 27.00.
IV Community Services and Utilities		
Main electrical service line (2000 users rate)		$ 7.00.
Potable water main (1000 users rate)		35.00.
Community storm drain		4.20.
Grade and compact access road		6.50.
	Sub total	$ 52.70.
V Contingencies (10%)		$ 141.00.
	Total	$ 1,557.70.

Total project cost for 500 units is $780,000.

Activities of the private construction industry continue to be centered around Lima and in the building of the several thousand houses financed each year by savings and loan associations. In the earthquake zone, of the 5000 units in six projects identified for immediate construction, private sources are financing 800 units and private developers are building about a fifth of the total reconstruction effort.

STANDARDS FOR HOUSING COSTING $1,500

FCH, in cooperation with the reconstruction commission (CRYRZA), has designed a special demonstration project of 500 units on 15 hectares. The unit cost of the 60 square meter expandable shell unit is $1,550. It consists of four rooms which can be expanded by 60 square meters with the addition of a stairway and second floor. The lot is 100 square meters in area. Table 25 shows the distribution of costs for the Minimum Shelter Program.

The program is intended to be developed as a home owners association, utilizing self-help methods for initial construction to improve the community infrastructure, complete the shell houses and carry out neighborhood administrative duties.

Dwellings will be purchased without down payment at 3% interest plus amortization over a 20 year term. An additional 1% premium for hazard insurance and a 1% administration and collection fee will be made to "EMADI", a public mortgage collection corporation. The monthly payment will be $10 for participants in the program.

RECOMMENDATIONS

The proposal for a 500 unit, minimum shelter program prepared by FCH in collaboration with CRYRZA in August 1971 was officially adopted by CRYRZA in February 1972. CRYRZA has issued its official publication titled, "Programa Piloto de Asentamientos Orientados Para Chimbote - Peru", which describes the proposal in detail.

At present, however, the CRYRZA agency has been unable to make the first implementing steps for the program due to an extreme limitation placed upon its authorization to engage the appropriate personnel. There are no existing cooperative housing organizations in the area which have available the technical skills required to implement the program. FCH has been requested by the AID Mission to Peru to investigate the possibility of assigning a technical specialist in cooperatives and self-help housing to undertake the "Asentamiento Orientado" program.

FCH recommends that an additional fund of no less than $300,000 be set aside by AID for hiring a Peruvian technical staff, furnishing and maintaining an office for two years. The organization will form a nucleus of a permanent technical service organization to continue development of cooperative housing and organized minimum settlements in the Chimbote region.

FOLLOWING COUNTRY STUDIES WERE DRAWN FROM FCH FILES AND WERE NOT INCLUDED IN THE FIELD STUDY PROGRAM FOR THIS REPORT.

VII. LOW COST HOUSING IN JAMAICA

The analysis of low cost housing prospects in Jamaica was not a specific element in the FCH field study activities for this report. In conjunction with the visit of an FCH advisor to prepare studies on urban housing by Mutual Housing Services Ltd, the cooperative technical housing agency, a proposal for a rural minimum shelter program was investigated. Subsequent to this investigation, funds were received to develop the rural program utilizing a more complete dwelling design and urbanization facilities.

In May 1971, the Government of Jamaica purchased from the foreign owned West Indies Sugar Company 60,500 acres of land devoted to sugar growing in the parishes of Clarendon and Hanover-Westmoreland. The purpose of the government's action was to resell the property to Jamaicans so as to achieve greater national control of the economy. This program may also serve to stabilize rural social conditions by giving Jamaicans a greater motivation to remain and improve these areas.

As part of the social program, the Jamaican Social Action Center was selected by the Ministry of Labor and National Insurance to carry out a comprehensive cooperative program, beginning with credit unions and housing cooperatives. Two credit unions in the Lional Town area, the Hillside and the Baldwin Cottage Citizens Association have already purchased land for the first two cooperative housing projects. The Social Action Center has asked Mutual Housing Services Ltd. to serve as developer of their first two projects and to prepare plans and general cost estimates for mortgage financing.

The membership of the two credit union organizations is similar in character and income. Approximately half of the members are employed in the major sugar factory of the region and half are small farmers selling to the factory. Average income is $960 per year. Savings deposits in the credit union are made through payroll deduction by the sugar factory. A major objective of the savings plan is to generate substantial capital to enable rural tenant farmers to purchase the presently government-owned sugar land when it is eventually sold.

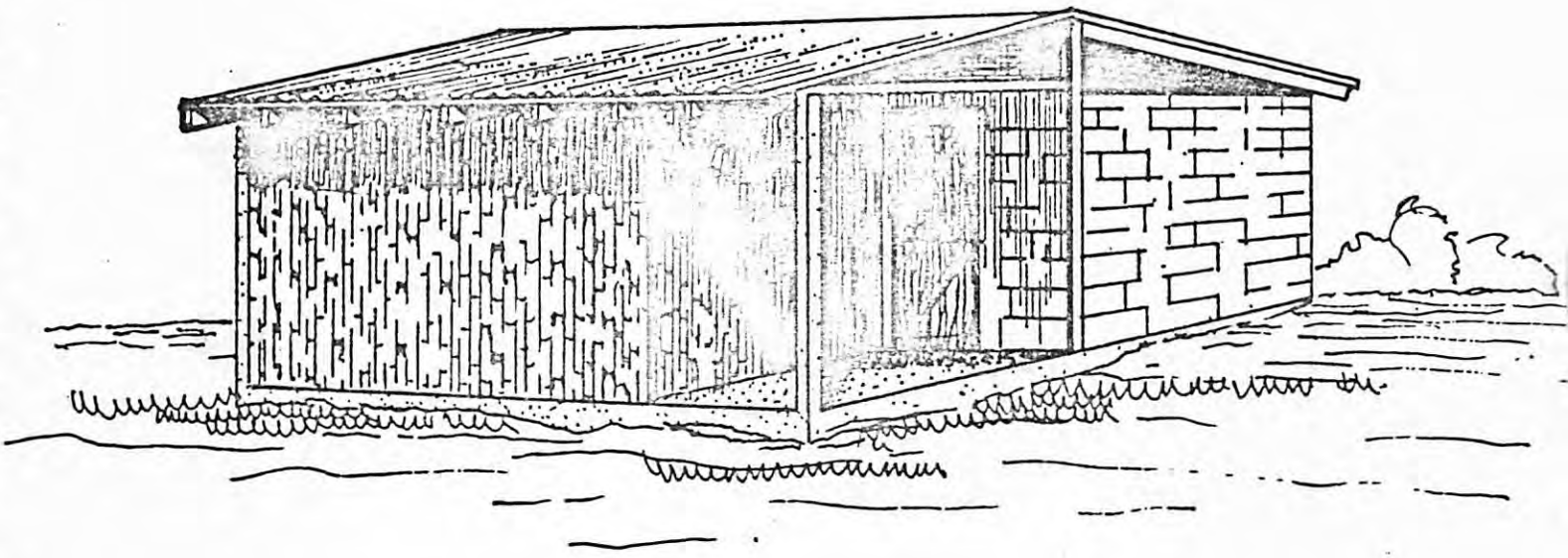
Housing proposals developed for rural development are intentionally in the lowest cost catagory to encourage extensive self-help participation by the residents and retain capability for the accumulation of savings as down payment on agricultural land purchase. Minimum urbanization works with compacted 10 foot crushed stone carriage ways on the connector roads, electricity and standpipe water distribution are proposed. Water born sanitation will be serviced by family carrying of water containers and ladeling for use. Future house pipe connection is planned. Houses of 360 square feet ($33.4m^2$) of covered area and 180 square feet ($16.7m^2$) of enclosed area may be built at a total cost of $1,500, including the cost of urbanization and development fees.

The monthly cost to the cooperative member is about $15, or some 12 percent of minimum monthly income. The remaining monthly savings capability of members will be applied for the purchase of agricultural land or extension of housing and urbanization works by self-help means. MHS may consider the organization and development of cooperative industries to produce concrete blocks, low-cost toilet pans, and wash basins. Locally supplied wood louver windows and doors may be substituted for manufactured products.

Tables 38 and 39 show the component costs per dwelling of the two projects. Note the effect on the final dwelling cost of legitimate fees and financing charges which are not commonly shown in calculations by government and philanthropic private agencies for lowest cost housing.

JAMAICA

SOCIAL ACTION CENTER - M.H.S. LTD.



DWELLING COST
$1,481.00

DWELLING AREA
33.4 M²

TABLE 39

HILLSIDE CITIZENS ASSOCIATION PROJECT

LIONEL TOWN, CLARENDON, JAMAICA

February, 1972

Land: 39.25 acrea at $10,400
113 lots of 1/4 acre

I.	CONSTRUCTION COST		
1.	Site improvement	$115.00	
2.	Utility installation (water, electricity)	178.00	
3.	Dwelling construction	850.00	
	Sub total		$1,143.00
II.	CONSTRUCTION FEES		
4.	Builders profit and overhead	87.10	
5.	Engineer (2 1/2%)	29.10	
6.	Land survey	5.90	
7.	Performance bond premium	2.90	
	Sub total		125.00
III.	FINANCING CHARGES		
8.	Interest on construction loan	21.30	
9.	Liability and hazard insurance	2.90	
10.	Jamaica mortgage bank process fee (1%)	13.70	
11.	Notary and recording fee	5.90	
12.	Mortgage insurance law premium (2 1/2%)	32.00	
13.	Legal fee	6.00	
	Sub total		82.00
IV.	CONTINGENCY ALLOWANCE (5% of No. 4 to 13)		68.00
V.	COOPERATIVE DEVELOPER AND SALES FEE (5 5/8% of 4 to 13 + 25% of 14)		78.00
	Total		$1,496.00
VI.	LAND (prepaid by participants)		92.00
			$1,588.00

TABLE 40

BALDWIN COTTAGE CITIZENS ASSOCIATION PROJECT

PORTLAND, CLARENDON, JAMAICA

February, 1972

Land: 55 acrea at $17,900
176 lots of 1/4 acre

I.	CONSTRUCTION COST		
1.	Site improvement	$ 74.00	
2.	Utility installation (water, electricity)	200.00	
3.	Dwelling construction	850.00	
	Sub total		$1,124.00
II.	CONSTRUCTION FEES		
4.	Builders profit and overhead (7 1/2%)	85.00	
5.	Engineer (2 1/2%)	28.00	
6.	Land survey	5.50	
7.	Performance bond premium	2.20	
	Sub total		120.70
III.	FINANCING CHARGES		
8.	Interest on construction loan (1/3 of 5% - 1 year)	21.00	
9.	Liability and hazard insurance	2.20	
10.	Jamaica mortgage bank process fee (1%)	12.50	
11.	Notary and recording fee	3.60	
12.	Mortgage insurance law premium (2 1/2%)	31.00	
13.	Legal fee	5.00	
	Sub total		75.30
IV.	CONTINGENCY ALLOWANCE (5% of No. 4 to 13)		61.50
V.	COOPERATIVE DEVELOPER AND SALES FEE (5% of 4 to 13 + 25% of 14)		100.00
	Total		$1,481.50
VI.	LAND (prepaid by participants)		100.00
			$1,581.50

VIII. LOW-COST HOUSING IN ECUADOR

FCH was requested by the AID Mission in Ecuador and the Ecuadorian Housing Bank (BEV) to develop a minimum shelter program for two sites in Guayaquil. Following is a summary of the FCH report.

HOUSING NEED

The accelerated growth of the city of Guayaquil has had a very strong and material effect upon the living conditions of its inhabitants which has reflected upon the national economy.

According to the statistics provided by BEV and the Planning Board, the city has grown at a rate of 6.17% annually. In the eleven years between 1962 and 1973 it is estimated that 420,000 people will be added to the population for a total of 930,500 inhabitants. It appears that the urban population of Guayaquil is doubling each 12 years.

About half of the population growth of Guayaquil is caused by natural fertility of the existing population. The other half corresponds to the strong in-migration of new settlers from the provinces along the coast and highlands. A partial cause for this migration is the search for a better standard of living, work and education. Very quickly these hopes have become frustrated due to the scarcity of urban resources and services.

Settlement of the recent migrant families is confined principally to the low lying slum areas to the south of the city, which are unserved by public utilities and services. Shacks which are initially constructed of cast-off materials have been quickly rebuilt with permanent materials. Unfortunately,

the high cost of urban improvement works and scarcity of economic resources make the completion of these communities almost impossible.

HOUSING DEMAND

The suburban population of Guayaquil is estimated currently at about 400,000 people who live in marginal land and squatter communities. They have built their own housing with their own resources using the most rudimentary standards of sanitation and safety. The population of the squatter settlements of Guayaquil comprises 8% of the national population of Ecuador.

The Ecuadorian Housing Bank, BEV, has calculated that in 1967, Guayaquil required 55,760 housing units to satisfy the rapid growth of its population. Some 40% of these houses, 22,300 units, should have been developed by the government housing agencies for income groups not attended to by the organized private building industry.

A program for minimum shelter in Guayaquil must focus upon the needs of families who have monthly incomes of between $25 and $92 and whose capacity for repayment of a housing loan varies between $3.80 and $23 per month.

In order to reduce the need for subsidies from the State, standards of design of subdivisions and houses and specifications for materials and labor must be concurrently reduced to conform to this low repayment capability. When this results in proposals which are of lower standard than the requirements of the Official City Code, emphasis should be made on the urgent need for low cost minimum shelter and the economic realities of the nation and its people.

PLANNING CONSIDERATIONS

BEV and other national and international organizations are aware of the critical nature of the problem and they are anxious to develop a housing program which will help relieve the living conditions of the suburbs of

Guayaquil. These entities also recognize the need for new program approaches in order to find viable solutions for the present very poor population. To this end lots and services and minimum shelter programs have been studied.

It is anticipated that lots and services and minimum shelter programs will provide the basic necessary utility infrastructure which is required by the municipality to provide sanitation and safety and to bring organization out of disorder. Such programs should be within the present economic resources of the participants and provide a base from which, with self-help, they may complete and expand their houses as their own financial conditions permit.

The program has been developed to help 1) prevent the growth of new and disorderly squatter communities; 2) improve the housing of the suburban areas whenever it is possible to do so under favorable conditions; 3) provide much needed relief from the housing need in Guayaquil; and 4) make design alternatives available within the economic means of a varied sector or a low income population by taking advantage of the human., physical, institutional and financial resources presently available.

Financing for the proposed plan may come from three primary sources:

1) Bev's own resources.

2) Credit from foreign lending agencies.

3) Participants' resources in the form of down payments.

BEV will carry out the program in collaboration with such organizations as housing cooperatives, savings and loan institutions, credit cooperatives and community development agencies. The suggestions and participation of such entities will be valuable in the organization and administration of the program.

Land is available in Guayaquil to support a low density minimum shelter program,located at desirable sites in relation to the downtown section

of town and the industrial zone, where many squatter residents work. The proposed program does not entail massive movements of the suburban population to this land or the eradication of squatter shacks.

ALTERNATIVE SOLUTIONS

FCH recommends the development of five distinct types of projects.

Type I - Lot, Latrine and Community Piped Water Spigot

Lot of 129.5 M^2 in area including a dry hole latrine shall be provided for each participant. One communal spigot of potable water should be provided to serve each group of 10 families. Access by unpaved public street or pedestrian walkways will be provided for each lot. This is the basic minimum solution.

Type II - Lot and Utilities to each Lot

Lot of 129.5 M^2 in area with piped potable running water on each lot, sanitary sewer and storm water drains, unpaved public streets, optional electrical service, optional installed sanitary fixture component.

Type III - Lot and Utilities, Roof and Floor Structure

Lot of 129.5 M^2 in area with utilities and services as in the Type II solution, a roof structure and durable floor with a surface area of 50 M^2 and an installed unit composed of sanitary fixtures which would eventually result in the completion of a house with an enclosed floor area of 75 M^2.

Type IV - Lot and Utilities, A Core House

Lot of 129.5 M^2 in area with utilities and services as in the Type II solution, an enclosed structure composed of the elements in the Type III solution, with exterior walls, kitchen, sanitary component, doors and windows.

Type V - Home Improvement Loan

Supervised credit to families who own a house which may be profitably improved and which is located in a suburban area of Quayaquil.

CALCULATION OF COSTS

To form the basis for future expansion of the minimum shelter program in Ecuador, FCH calculated costs for the five alternative solutions, both for the low swampy land of Guayaquil and for the mountainous highland towns and cities. Prices supplied by the Technical Department of BEV for materials, labor and indirect costs were those pertaining to December 1970.

TABLE 41

MINIMUM SHELTER IN THE WELL DRAINED HIGHLANDS

SALES PRICE CALCULATED BY TYPE OF SOLUTION

	Type 1 Lot and Latrine	Type 2 Lots and Services	Type 3 Lot, Roof, Floor Shelter	Type 4 Lot, Core House
I. Construction Cost				
1. Land	$174.00	$174.00	$174.00	$174.00
2. Streets - unpaved	5.40	5.40	5.40	5.40
3. Latrine and communal	32.00	32.00	-	-
water tap	19.50	-	-	-
4. Water and sewer to each lot	-	110.50	110.50	110.50
5. Electrical service to each lot	-	-	77.50	77.50
6. Floor-roof shelter with sanitary fixtures	-	-	500.00	-
7. Core house	-	-	-	757.00
Sub total	$230.90	$321.90	$867.40	$1,124.40
II. Design Fee (3-1/2%)	8.07	11.60	30.30	39.40
III. Development Administration Fee (6%)	13.90	19.30	52.00	67.50
IV. Finance Administration Fee (3%)	5.90	9.70	26.00	33.80
V. Interest on Construction Funds Insurance and other fees (10%)	23.10	32.20	86.70	114.20
VI. Profit (10%)	23.10	32.20	86.70	114.20
VII. Contingencies (3%)	5.90	9.70	26.00	33.80
VIII. Utility Extension Charges				
1. Storm drainage	-	33.60	33.60	33.60
2. Potable water main	7.20	7.20	7.20	7.20
Sub total	$87.17	$115.50	$348.50	$443.70
TOTAL	$318.07	$477.40	$1,215.90	$1,568.10

TABLE 42

MINIMUM SHELTER IN GUAYAQUIL

SALES PRICE CALCULATED BY TYPE OF SOLUTION

	Type 1 Lot and Latrine	Type 2 Lots and Services	Type 3 Lot, Roof, Floor Shelter	Type 4 Lot, Core House
I. Construction Cost				
1. Land	$174.00	$174.00	$174.00	$174.00
2. Streets - unpaved	8.60	8.60	8.60	8.60
3. Latrine and communal	24.00	24.00	-	-
water tap	19.50	-	-	-
4. Water and sewer to each lot	-	128.50	128.50	128.50
5. Electrical service to each lot	-	-	155.50	155.50
6. Floor - roof shelter with sanitary fixtures	-	-	675.00	-
7. Core house	-	-	-	930.00
Sub total	$226.10	$335.10	$1,141.60	$1,396.60
II. Design Fee (3-1/2%)	7.90	11.70	40.00	49.00
III. Development Administration Fee (6%)	13.60	20.10	68.50	84.00
IV. Finance Administration Fee (3%)	6.80	10.10	34.20	42.00
V. Interest on Construction Funds Insurance and other Fees (10%)	22.70	33.60	114.00	140.00
VI. Profit (10%)	22.70	33.60	114.00	140.00
VII. Contingencies (3%)	6.80	10.10	34.20	42.00
VIII. Utility Extension Charges				
1. Storm drainage	-	-	-	-
2. Potable water main	7.20	7.20	7.20	7.20
Sub total	$87.70	$126.40	$412.10	$504.20
TOTAL	$313.80	$461.50	$1,553.70	$1,900.80